

CHRYSLER WINS '57 MT AWARD

MOTOR TREND

The Car Owners Magazine



MAY 1957 25c



WILD CUSTOM PAINTS — page 36

**TESTING THE TOP U.S.
RIDE and HANDLING CAR**

Secrets of Stock Car Wins — page 58



**NEW 8-PAGE SECTION
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ILLUSTRATED**



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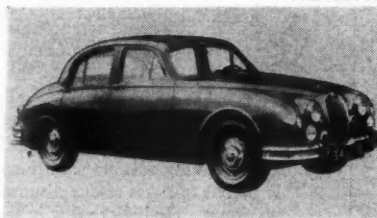
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THE COVER:



THE LATEST FAD in customizing—flame-painting—gives a new, exciting look to the '56 Chevy in the upper right. Modeling beside her own car is Carol Lewis of Los Angeles. The painting is the work of Dean Jeffries. Below it is Hersh Conway's '49 Ford, restyled by George Barris, using up-to-the-minute, flared fenders. Both custom photos are by George Barris. On the left is the '57 Chrysler New Yorker, road tested on page 20. Ektachrome is by Chief Photographer Bob D'Olivo. Shown here is the new Jaguar 3.4, a genuine sport sedan just introduced in the U.S. The big engine in the small body is capable of producing speeds in excess of 120 mph. Other new foreign cars are on page 28.

Next Month Seat belts—are they a death trap? The pros and cons of this controversial subject will be thoroughly discussed in the June MOTOR TREND. We will also present complete pictorial preview of the Indianapolis race cars. The Custom Car section will be devoted to bolt-on customizing with easy-to-install kits.

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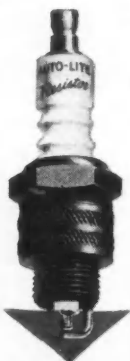


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POWER TIP "FIRES UP" YOUR CHEVROLET AT ALL SPEEDS!

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MEMO

from the editor

OUR FAMILY DOCTOR sent us the January 26, 1957 issue of *The Journal of the American Medical Association*, with the following note, "Thought you might find the enclosed article of some interest relating to some of your recent editorials." He couldn't have been more right, for this particular issue was loaded with articles on the automobile and crash injuries. Of particular import was the article, "The Doctor and the Automobile Accident," by Murray E. Gibbens, M.D., William V. Smith, M.D., and Ward B. Studt, M.D.

Its concluding section began, "We would also like to present for consideration a 'Good Driver's Code.' If each candidate for a driver's license were required to read and sign such a code, or better still, to memorize it, we believe there would be fewer poor drivers." And we append "Amen!" to that. Following are the highlights from the suggested code:

1. I will keep my car in good mechanical condition at all times.
2. I will never drive after drinking any alcoholic beverage, or after using any type of sedative drugs.
3. I will obey the traffic regulations and speed laws of my city and state.
4. I will never drive when sleepy or exhausted.
5. I will keep alert to driving and traffic conditions.
6. I realize that in bad weather, such as fog, rain, ice, snow, or high winds, it may be necessary to greatly reduce my speed for safe driving.
7. I will be courteous to other drivers and pedestrians.
8. I will control my temper at all times. I will not drive if I am angry or emotionally upset.
9. I will always carefully signal my intentions to stop, slow, or turn by both hand signals and electric signals.
10. I will avoid driving close to the car in front of me, so that I may have plenty of time to stop.
11. I will not cut back into the driving lane too soon after passing.
12. I will avoid racing, excessive speed, or show-off driving at all times.
13. I will avoid driving too slow in passing lanes or in fast-traffic lanes.
15. I will carefully watch the other driver and his car and try to anticipate his actions or change of course or speed.
16. I will not allow other drivers to use my car unless they also subscribe to these rules of driving.

The doctors' conclusion was, "Let us see if we can get a code such as this adopted by state licensing boards and highway patrols, as well as by the automobile insurance companies."



IT'S VERY GRATIFYING to see work crews busily engaged in improving our country's highways. When you travel on some of our present dilapidated roads you can easily get the impression that they're as much at fault for many of our accidents as the cars or drivers themselves.

We are particularly convinced that some sideswipes and head-on collisions are caused by a combination of somewhat inexperienced drivers taking their easily over-corrected power-steered cars over rough, narrow roads. Then, when they encounter a truck they edge over, get pulled aside by the rough siding, over-correct, and smash into the oncoming vehicle.

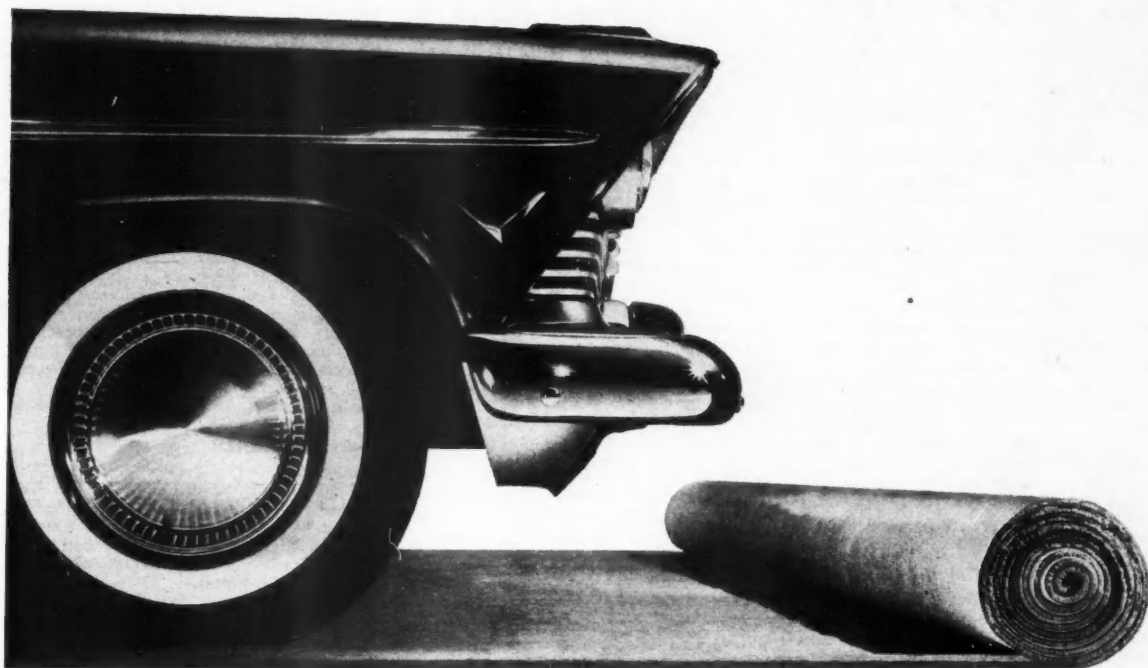


TO ALL CAR MANUFACTURERS, DISTRIBUTORS AND DEALERS: It takes time to become knowledgeable about any car, as all of us know. Taking advantage of this, several distributors and dealers have recently placed test cars at our disposal for much longer than our usual one-week minimum. We believe that it has resulted in much fairer and more objective appraisals than would otherwise have been possible. If a car is bad, you generally find it out very quickly. The longer you live with a *good* car, the more interesting are the features you find.

W. J. [Signature]

FROM THE *FORWARD LOOK*

THE OUTSTANDING ENGINEERING ADVANCE OF 1957!



NEW TORSION-AIRE RIDE...it carpets the road!

Only once or twice in a decade is there an engineering "break-through" as important as this!

Chrysler Corporation's engineers have perfected a completely new suspension system, a new kind of ride—Torsion-Aire!

This means your car will have greater stability, levelness, "floating comfort"—on any road. You will turn corners with virtually no "sway", and stop without "front-end dive". You'll ride as on a carpet—softly, quietly, without road shock!

Yet Torsion-Aire is just a part of what Chrysler Corporation's engineers and stylists have achieved for 1957, part of

the lasting value built into these cars!

You'll see styling so striking, so right, that it's called The New Shape of Motion!

You'll enjoy Pushbutton TorqueFlite, a new transmission—smoother, swifter than any yet devised! You'll discover new engine performance, smaller wheels with softer-riding tires, the new ease and assurance of Total-Contact Brakes!

See the 1957 cars of *The Forward Look* at your dealer's now. In every price range, in 93 different models, these are truly **THE NEWEST NEW CARS IN 20 YEARS!**

How Torsion-Aire helps you



1 Smooths the roughest roads



2 Turns corners without "lean"



3 Stops without "dive"

CHRYSLER CORPORATION  **THE *FORWARD LOOK***

See the new Plymouth, Dodge, De Soto, Chrysler and Imperial now on display

MOTOR TREND/MAY 1957 5

(Advertisement)

McCulloch Supercharger



Tip

by
John Thompson

Spring is here, summer's not far away and that means a marked upswing in drag race competition from Maine to California. From what I've seen so far, 1957 should be the most competitive year in history. This became apparent to me at Daytona Beach, Fla., scene of the recent NASCAR Speed Trials where auto makers entered factory cars in unprecedented numbers. Speaking of Daytona, my sojourn there was a most pleasant one, what with renewing so many old acquaintances and making so many new ones.

A while back I asked readers to tell me of any unusual McCulloch supercharger installations. Well, I received a letter from Ed Anderson and Dave Preda of Euclid, O., who are extremely active in Ohio drag race competition. Ed and Dave have a 1950 Pontiac Catalina with a '54 Olds engine (full track camshaft), reworked dual-range Olds hydramatic, Cadillac Eldorado carburetor and, of course, a McCulloch supercharger. Total weight of the car is 4,090 lbs., so they've done right well in getting it over 90 mph in 15 sec.

Good news for readers in Southern Alabama and Western Florida: Frank Mallette, headman at Automotive Generator and Ignition Service, 553 Bell St., Montgomery, Ala., has just been appointed distributor of McCulloch superchargers in that area. Frank's an old timer in this business and can always be counted on for dependable service.

NEW KIT DEPARTMENT: Now available are McCulloch supercharger kits for 1957 Buick and Plymouth cars. By the way, you might be interested in knowing that the supercharger on the new 300 horsepower Ford is made by McCulloch expressly for this high performance beauty.

SPECIAL TO HOT RODDERS: By using a hot cam, you can increase your compression ratio, run more spark, and thus get the last word in performance from your McCulloch supercharged engine.

Let me think that McCulloch superchargers are made only for the hot rod enthusiast, let me hasten to assure you that such is definitely not the case. While it's true that blowers first achieved prominence in the drags and other speed events, today's supercharger owner may be a traveling salesman, dentist or bank president, with no desire at all to race his car. What these people are looking for is stepped-up performance and increased safety—and the McCulloch supercharger provides both. You see, it's safer and easier to pass at highway speed with a McCulloch and this can help you avoid the possibility of a serious accident in a tight spot.

For more information, just write to me, John Thompson, Paxton Products Division, McCulloch Motors Corp., 827 W. Olive St., Inglewood, Calif. Tell me the make and year of your car, carburetor type and what power equipment you have. I'll get you all the important details promptly.

LETTERS



ONWARD AND UPWARD

Dear Sir:

I want to tell everyone who reads this column how elated I am by the tremendous advances made by the Chrysler Corp.

I can remember the pathetic things Chrysler turned out in the Forties and early Fifties. At that time, it was certainly the "Big Two." Then, a year or two ago, there came from Chrysler a legitimate protest, sparked by the wonderful 300. And now it bursts upon us that Chrysler is not only one of the Big Three—but the leader. It's nice to see an underdog come up swinging.

J. Richards

Akron, Ohio

BOUNCING BUICK

Gentlemen:

You mention an unpleasant vibration at medium speeds in the Buick tested. Unhappily, I found it true in mine! Three wheel balancings, two separate shops, and one-by-one elimination of the tires on the road did nothing to alleviate this condition.

A move born of some desperation has solved my problem. I changed from U.S. Royal Safety 8 factory-equipped tires to B.F. Goodrich Lifesaver Premium tires and this has completely eliminated my source of vibration. Absolutely none, at any speed up to 80 mph.

H. G. Yarnell

Wauconda, Ill.

ANOTHER BOUNCER

Dear Sir:

You asked some owner or dealer to tell you why the Buick vibrated at speeds over 60. Well, the tires are almost always out of round or with high spots on the tread regardless of what price or brand you buy.

On the '55 Buick, I had the tires balanced but this did no good until I had the tires

turned around and then balanced! My car has no shakes at all now, even at full throttle. For the sake of a really nice car, print this so others will know that the Buick is a little more sensitive to rough tire conditions than its competitors.

Russell Wright

Compton, Calif.

EDITORIAL POLICY

Gentlemen:

I have long ago been convinced that a magazine which depends so heavily on commercial advertising would not dare to render anything like an adverse comment on a product or automobile that was being tested.

Your February issue has convinced me that your staff are quite willing to report what they find, even though the critique might be anything but flattering to the product under review. Please continue to call them as you see them. I'm sure that your readers appreciate it and the manufacturers will benefit by your comments.

Leslie Mellis

W. Hempstead, N.Y.

WHERE'S THE HITCH

Dear Sir:

Until recently, we constantly had our front license plate banged up by others backing into it. When we bought our new Chrysler, we decided to put one chrome ball trailer hitch on each side of the license plate [a sort-of bumper's bumper].

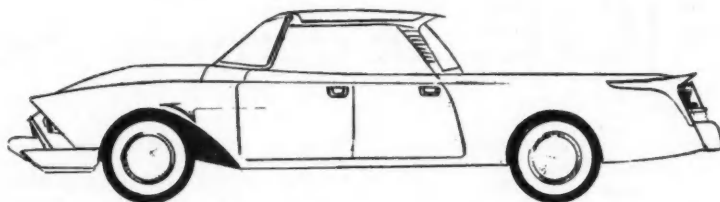
Bill Swain

San Bernardino, Calif.

BEETLE BOMB

Gentlemen:

My automobile design is in the medium- or higher-price range and although it is not extreme, its lines are functional and simple. Its powerplant could be any one of many and



EVER-DRY PICKUP

Gentlemen:

This is a sketch of what I would call a Chrysler-inspired four-door hardtop pickup. This idea would also apply to the slightly larger trucks used by gardeners and so forth.

I dreamed the idea up while walking in the rain and noticing a gardener's truck with the men in back getting a beating from the wind and the rain. My friend, Richard Gordon, drew the design for the idea.

Herb Tobin

Pittsburgh, Pa.

MOTOR

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the car could be produced today by any large automobile company.

Rodney Engelbrecht Toronto, Ont.

While we admire their draftsmanship, we wish that budding young designers would get away from the bigger-fatter-wider-longer trend that influences their creations.—Editor

OPEN LETTERS TO THE MANUFACTURERS

Gentlemen:

I subscribe to or read much of the automobile news and advertisements, and some of that "information" seems endless. I refer to the avalanche that emanates from General Motors and particularly that regarding the Chevrolet fuel injection.

According to General Motors specifications, the 283-cubic-inch Chevrolet engine, 9.5 to 1 compression ratio and two four-barrel carburetors produce 245 hp. This same engine with fuel injection produces 250 hp. But, the fuel injection set-up costs nearly \$500, or \$500 for a five-horsepower gain. I am referring to passenger automobiles.

This is an item, as far as the average car owner is concerned, that doesn't even exist and yet Chevrolet seems to be basing much of their advertising program on this pie in the sky. Costs and advantages, except for horsepower, are never mentioned and the American public is being taught to associate the name Chevrolet with fuel injection. In my opinion, this is highly misleading advertising.

Eugene Strachan

Kennebec, S.D.

Dear Sir:

I am very much for the all-around car, but if Detroit will look into the future when most families will have more than one car, they will have to come up with a larger variety of models or leave part of their business for Europe to fill.

I am referring to the "second car," which should be low priced and easy to park for the Mrs. to go shopping; a car which is built for the millions of men who have to get in and out of the car many times a day, who have to find a parking space and who carry samples. We salesmen have little need of space for six passengers but we do wish to be able to easily get in and out of the car, and [we need] enough trunk space to take samples out without jack-knifing ourselves or bumping our heads on the very streamlined trunk lids.

Oscar Beregi

Los Angeles

Dear Sir:

Speed is branded as the major cause of auto accidents, so the auto industry boosts horsepower to new highs in the 1957 models. Headlight glare and inadequate lighting are denounced as accident factors, so the auto industry places beetle-browed headlights (doubled for full blinding measure) so low that they must shine up into the eyes of oncoming drivers.

Statistically, Americans are getting taller, so this fact is met by making new cars "as much as five inches lower."

While protesting that it is being strangled by today's roads, the auto industry spends millions tooling up to cars of greater length and width. In the light of experience it is reasonable to fear that the 1957 cars are going to increase traffic congestion and are going to increase the accident toll.

R. Blagden

E. Hampton, Conn.



» Jim Whipple — CAR LIFE "TEN YEARS AHEAD OF ITS TIME"

"Your first look at the CITROËN DS 19 tells you that it's different... the sloping nose, under-slung air intake, long low body and narrow pillars, all these things give the DS 19 a marked resemblance to the sketches of dream cars."



» Pete Molson — MOTOR TREND "LEFT BABBLING IN WONDERMENT"

"Hunt up the worst road available... and you can hurl CITROËN over it with only occasional light thumps from the underpinnings. Three consecutive carfuls of our own passengers were left incoherently babbling in wonderment. So what is there to say? It has to be experienced."



» John R. Bond — ROAD & TRACK "DRIVES BOLDLY OFF THE BEATEN PATH AND NEVER FEELS THE BUMPS"

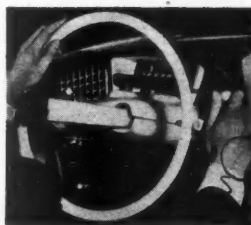
"On every kind of surface traversable by four wheels the 'hydropneumatic' suspension fulfills its designers' claims by absorbing shock and maintaining ability to degree never before achieved."

» ROAD TEST REPORTS

from the EXPERTS on the

DS-19

the new CITROËN

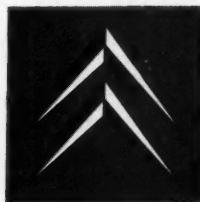


The DS-19, distinctively French
...Unmistakably CITROËN,
combines chic Parisienne elegance with the
road-hugging power of a Monte Carlo Winner.
FREE! Send For Complete ROAD TEST Reports!

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8423 WILSHIRE BLVD., BEVERLY HILLS, CALIFORNIA, OLIVE 3-4745

THE CITROËN DS 19 IS THE ONLY CAR, COMBINING AS STANDARD EQUIPMENT ALL THESE EXCLUSIVE FEATURES: FRONT-WHEEL DRIVE • MONOSHELL BODY • NEW DS 19 OHV ENGINE WITH DUAL THROAT CARBURETOR • POWER DISC-BRAKES • INDEPENDENT FRONT AND REAR BRAKES • CENTRAL HYDRAULIC SYSTEM WITH AUTOMATIC CLUTCH AND AUTOMATIC GEAR-SHIFT • CITROËN-SAFE "NO SPOKE" STEERING WHEEL • SAFETY DASHBOARD • EXCLUSIVE CENTRAL FIXATION OF THE WHEELS • LOWEST CENTER OF GRAVITY • UNIQUE CITIMATIC® AIR-OIL SUSPENSION...THE ONLY SUSPENSION THAT ACTUALLY FLOATS YOU ON AIR OVER THE ROAD!

CITROËN



SPOTLIGHT

ON

DETROIT

This Corvette Isn't Fooling

A STARTLING new experimental model of the Chevrolet Corvette was unveiled as we went to press. The custom-built car is known as the Corvette SS (Super Sport). It has been under development at the Chevrolet Engineering Center for several months. If shakedown tests were completed in time, it may have been tested at the Sebring, Fla., Grand Prix endurance trials late in March.

It has light-weight magnesium alloy body, a tubular frame to replace the conventional box-rail structure, a four-speed manual transmission, inboard rear brakes,

four-link rear suspension with de Dion type axle, and uses aluminum wherever feasible in the chassis.

by Joe H. Wherry
Detroit Editor

ED COLE, general manager of Chevrolet, says, "Testing over tough race courses will serve to quickly furnish comparative engineering data that, under ordinary circumstances, would require long periods of research." Cole credited Zora Arkus-Duntov, Chevrolet engineer and noted European designer and race driver, with major responsibility for the development of the Corvette SS. On October 1, 1956, Cole said, Arkus-Duntov was assigned an engineering staff which began literally to build a car from the floor up, within reaching distance of the drafting boards. A prototype was first tested, then the original design was modified and construction began.

As against the production Corvette's 102-inch wheelbase, the SS's is 92 inches, but the overall length of 168 inches is the same on both cars. Due primarily to exhaust ports flowing from each of the cylinders, a fuel-injected V8 develops 300 horsepower plus, an outstanding achievement with a displacement of only 283 cubic inches (more than one horsepower per cubic inch).

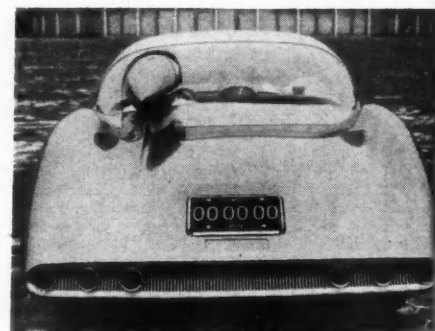
THE 180-POUND TUBULAR FRAME, which extends basket-like around the two-place driver's compartment, offers economy in weight and high resistance to stress. The ability of the frame to withstand torsion and shock permits the use of light-weight magnesium for the low-slung body shell.

Saving through these and other factors, such as a 43-gallon plastic gas tank, is illustrated by the dry weight of 1850 pounds. The production Corvette scales approximately 2800 pounds.

The experimental SS is too new and untested for performance figures, but the power/weight ratio—figured at one horsepower to each 6.6 pounds—indicates potential acceleration ability far superior to any recognized U.S. make.

THE POWER PLANT is basically a 283-cubic-inch-displacement Chevrolet V8 production engine. A high-performance camshaft is used with solid-type valve tappets. The cylinder heads, intake manifold, fuel injection system, and minor parts are experimental. This engine has a standard V8 cylinder block, with 3.875-inch bore and three-inch stroke. Air intake is through the radiator grille, which admits unheated air into a plenum chamber.

A number of engine components are made of aluminum or magnesium to reduce weight and facilitate heat dissipation. Included in the parts made of aluminum are the cylinder heads, clutch housing, water pump and radiator core. The oil pan is made of magnesium. Engine weight per horsepower is approximately 1.5 pounds.



COMPETITORS may see much of the aerodynamic lines from this angle.

CLUTCH, EXHAUST AND GENERATOR:

A hydraulically operated clutch release system is used in combination with a high-capacity coil spring clutch. Exhaust is through individual pipes fed into collector pipes equipped with straight-through-type mufflers. An aircraft-type generator is used in the 12-volt electrical system.

AN ALUMINUM RADIATOR CORE

with an engine oil cooler in the bottom is used, because of both its low weight and its efficiency. Coolant is circulated by an aluminum water pump of relatively low rpms. There is no fan. The engine and front brakes are cooled by air from the radiator grille, which is exhausted by ducts.



CAR HAS MAGNESIUM WHEELS with knock-off hubs. Bomb-shaped headrest conceals roll bar welded to frame. Front and rear body sections are hinged.

THE BACKBONE of the Corvette SS is a light-weight tubular-truss frame, welded of chrome molybdenum steel tubing and providing a high degree of strength and rigidity.

FRONT WHEELS are independently suspended by non-parallel, rubber-bushed control arms. Forged steering knuckles attach to the control arms through spherical joints. The coil springs, shock absorbers and spring bumpers are assembled as integrated units for installation at each wheel. For sway control, a link-type stabilizer bar is employed. Front suspension geometry is such that a high roll center is achieved, contributing to handling and stability.

The rear axle is mounted in the de Dion principle. The differential assembly is rigidly attached to the frame, the road wheels being interconnected by a tubular member upon which the frame is sprung. Since the differential is moving with the chassis in relation to the road wheels, the shafts which drive the wheels have universal joints at either end. An advantage of this arrangement is its inherently low ratio of unsprung-to-sprung weight. Because the differential assembly is carried by the springs, the unsprung weight that remains can be more accurately controlled. Furthermore, the engine torque being absorbed within the frame does not affect rear-wheel loading. As in the front suspension, rear springs, shock absorbers and spring bumpers are of unitized construction. Suspension movement at the rear wheels is controlled by four arms, linking the frame and the de Dion tube.

THE BRAKES are power assisted, having two separate systems operated through the single pedal. The separate systems include individual hydraulic vacuum-assisted units for the front and rear brakes. Failure of one unit will not deprive the car of stopping power. Further, a mercury switch, sensitive to deceleration, can be adjusted to limit rear-wheel braking to a predetermined amount.

Conventional brake assemblies employ two leading-type shoes. Composite

drums, which are basically cast-iron with a cast-aluminum outer rim, combine rigidity with heat dissipation ability. The rear brakes are inboard-mounted, next to the differential case. In this design, all braking as well as driving torque reactions are taken directly through the frame, relieving the rear-suspension articulating members.

THE TRANSMISSION is a Chevrolet four-speed unit with *all* forward gears synchronized. Aluminum alloy is used for the case to reduce weight (the entire unit weighs 65 pounds). A short propeller shaft connects the transmission with the frame-mounted rear-axle differential assembly.

STEERING is provided by a recirculating ball-type gear with linkage placed forward of front-wheel spindles. Overall steering ratio is 12 to 1. Wheels are cast magnesium with knock-off hubs.

A PLASTIC WINDSCREEN shields the two-passenger cockpit at the front and sides. The head-rest housing encloses a roll-bar which is rigidly attached to the frame. Hinged at the front, the body forward of the cowl can be raised for easy access to the engine compartment. The body is also hinged at the rear. The radiator grille and body side panel bear a marked resemblance to those on the production Corvette.

BIGGEST DETROIT NEWS, as this is written this month, is the continuously encouraging stride *forward* by that *forward-looking* outfit, the Chrysler Corp. From the shaky position of '54, the Chrysler people, by the bootstraps of revolutionary styling, made slight progress in '55 and '56—now, though, President Tex Colbert's autumn '54 target of 20 per cent of the market has been achieved. At this moment, the high-styled, higher-finned cars are selling at a 20.4 per cent share of the overall market.

RECENTLY, WHEN QUERIED as to the oft-rumored intention of Chrysler to plunge into the small-car market (as

LIGHT-WEIGHT magnesium body covers 180-lb. tubular space-type frame.

a result of the continuing Volkswagen phenomenon), Mr. Colbert said, "We have been studying the possibilities of a small car. Right now we're exploring the European market. After all, that's about a \$5 million-a-year market now."

IN OTHER WORDS, it seems that Chrysler is considering an active competitive campaign with a small, European-type car built in Europe under Chrysler sponsorship. The effect of the *forward look* in shrunken size would indeed be interesting. In our opinion, those small European family-type cars could well do with major restyling for the most part. Even though we number ourselves among the exponents of small cars for many purposes, there are few of them — mass-produced ones — that send one on the basis of looks.

STYLING IS IMPORTANT—proof of that is the current Chrysler success. Whether we like the idea or not, we are finally becoming convinced that most folks buy on the basis of looks. But Chrysler has fooled them this year—they not only get high style but the best suspension system domestically available to boot and that's why the Editor and your Detroit Editor made a presentation to the Corporation on the 7th of March (see page 19.)

ACCORDING TO CHRYSLER BRASS, there are a number of European small-car firms that could be purchased outright, and Chrysler is shopping. From what we can learn, should Chrysler plunge into the foreign field with a small car, it could very well bear the same relationship to the large domestic products as do the German and British-built Fords, Opels, etc.

continued on next page

THE RUMOR MILL

is now on page 14

MOTOR TREND/MAY 1957 9



SPOTLIGHT

continued from preceding page

CHRYSLER'S NEW SUCCESS heralds an invasion into the field of automobile finance as well. As things stand now, the establishment of a subsidiary to handle financing on much the same basis as the GM Acceptance Corp. is likely.

PLYMOUTH ADDS A NEW MODEL—the middle line, Savoy, now has a four-door hardtop. Previously only the Belvedere, at a higher price, had a four-door h/t, while Belvedere and Savoy



PUSH A BUTTON on Ford's new hardtop, deck lid opens, top folds . . .

each had a two-door hardtop. Plaza alone sticks to pillars on all models—but it's the lowest priced of the line.

THE NEW SAVOY HARDTOP FOUR-DOOR will be on sale as you read this, can be had with any of the Six or V8 engines, and has an attractive price structure starting at \$2120 F.O.B. factory for the Six (not including federal, state, or local taxes or shipping and handling charges).

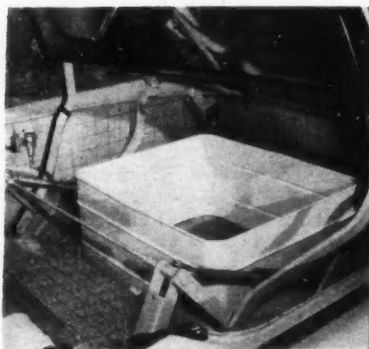
A NEW AIR-CONDITIONING UNIT will be generally available shortly—also a Chrysler product. We understand that all of the paraphernalia required to make an ice box of the family jalopy fits compactly beneath the dash and hood; also hear that the new unit can be installed in just about any make of car. Don't have the price yet, or particulars, but with hot weather around the corner, this gizmo should be worth investigating.

REBEL ENTERS PRODUCTION as this month's Spotlight is written. Due to dealer demand, the start of the Rebel



STUDEBAKER and Packard Clipper station wagon use "captive-air"

line was updated nearly two weeks. First Rebels to go on sale will be with the four-barrel-carburetor, 255-bhp version we reported on in last issue's Drivescription. So-equipped price, F.O.B. Kenosha, will be \$2785.90 up. The fuel-injected model will begin production in a few weeks, will cost \$395 extra—the delay being due to Bendix Aviation's (the F.I. supplier) commitments elsewhere. We had hoped to be able to bring some performance data on the *injected* Rebel in this issue but one can't test what ain't available at the moment. Incidentally, the Rebel in both versions will be produced only on *dealer order*, which means that most merchants will respond directly to the wishes of the public. If you want a Rebel (and we think you should), you sho-nuff can buy one.



. . . revealing six cubic feet of space (vs. 22 in a standard convert) . . .

AND I'M TOLD that the recent AMC crisis has been weathered nicely by the management and that the '58 models will make your eyes pop. Ours have already bugged out but we're sworn to keep mum about the all-new line for the time being.

STUDEBAKER-PACKARD may be right on the verge of a deserved rise in popularity too. New station wagons in the Studebaker and Packard Clipper lines are about ready for sale. These feature a third seat for three additional passen-

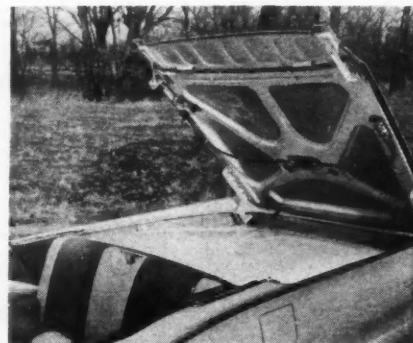
tires, thus eliminating need for spare. Rear-facing seat is for three.

gers facing to the rear. Of course all Clippers feature the long wheelbase and are four-door models but in the case of the Stude, the new line will be available only in the long-wheelbase models and with four doors. The new "captive air" tires are to be standard equipment and the spare has been scratched.

AN ITEM OF INCIDENTAL S-P INTEREST is something yours truly learned during his recent five-day sojourn in Cuba during the first Cuban Grand Prix (see page 58). Noting lots of Studebakers everywhere, I made some inquiries upon my return and learned that the *export* situation is a very bright spot with S-P. It accounts for a good 20 per cent of South Bend's production, the highest for any domestic car manufacturer except Willys; actually the latter is a commercial producer so S-P actually has the highest percentage.

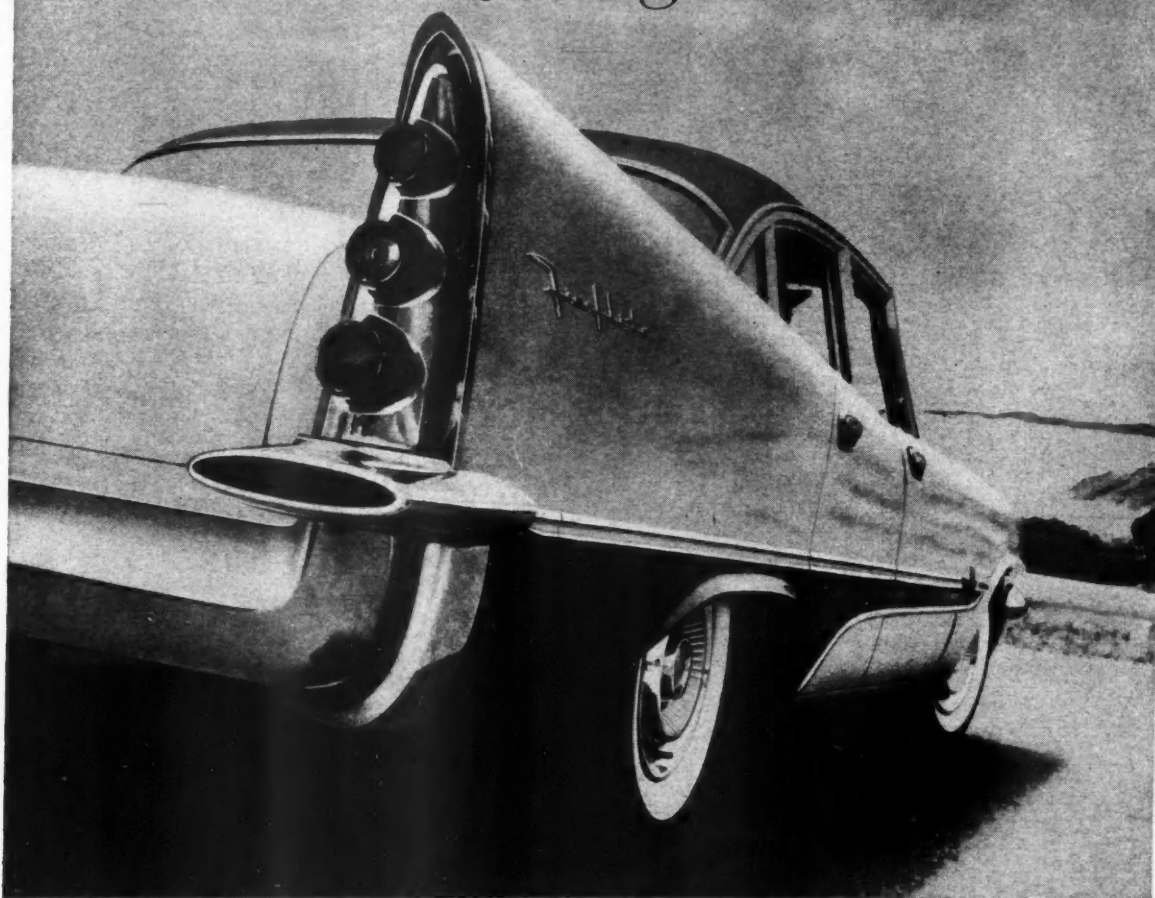
FORD RIDES HIGH ON THE CREST of new styling, and by the time you read this, will be approaching the millionth '57 Ford. All 15 assembly plants are operating overtime and at this writing, production is 18 per cent higher than for the same period (five on-sale months) last year. Sales, a more accurate reflection of popularity, are up 28 per cent over last year for the first five model months, and dealer stocks are

continued on page 60



. . . then, after top covers steel well, deck lid closes.

*This baby can flick its tail
at anything on the road!*



De Soto Division, Chrysler Corporation

DE SOTO FIREFLITE 4-DOOR SEDAN IN SEATONE BLUE AND WHITE

Take the wheel of a new De Soto, and pilot her out through traffic toward the open road. Before you turn your second corner, you'll know this is the most exciting car in the world.

And these are the eight reasons why:

New Torsion-Aire ride! De Soto for '57 presents a completely new suspension that combines torsion bars, outrider springs and super-soft cushion tires. It gives you an exciting level ride, takes corners without lean or sway, and prevents "dive" on quick stops!

New TorqueFlite transmission! The most advanced ever built. Gives you a smooth flow of power and an exciting new getaway!

New Triple-Range push-button control! Simply touch a button and you're on your way! Positive mechanical control!

New Flight Sweep styling! DeSoto presents the new shape of motion—long, up-swept tail fins and low silhouette (only 4 feet 7 inches high) with plenty of head room, and 32% more windshield area.

New super-powered V-8 engines! '57 De Soto engines are rugged, efficient, and powerful. (Up to 295 hp!)

New 4-Season air conditioner! This advanced unit—mounted under the dash—cools in summer, heats in winter. One simple set of controls.

New advanced power features! You can have your choice of the finest power features.

New glamorous interiors! Each '57 De Soto features new fabrics with smart trim and a flight-styled instrument panel.

Wide new price range... starts close to the lowest!

FIRESWEEP—big-value newcomer for 1957—priced just above the lowest. 245 hp

FIREDOVE—medium-priced pacemaker—exciting style and performance. 270 hp

FIREFLITE—high-powered luxury for 1957—the last word in design and power. 295 hp

DE SOTO

...the most exciting
car in the world today!

De Soto dealers present **Groucho Marx** in
"You Bet Your Life" on NBC radio and TV

NEW DU PONT DISCOVERY KEEPS



Here's what 4,000,000 miles of road testing proves M.O.A. can do

- Prevents clogging of oil screens and filters—reduces wear
- Keeps sticky gum from clogging valves and piston rings... helps prevent noisy valve lifters
- Maintains more constant viscosity... saves oil
- Keeps engine running smoothly—saves gas
- Maintains oil pressure
- Cuts costly engine repair

New patented chemical discovery

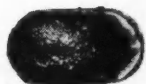
ENGINES CLEAN, CUTS REPAIRS

Du Pont M.O.A. keeps vital engine parts free of harmful sludge . . . prevents noisy valves, sticky rings. Saves gas, oil and costly repairs

Imagine keeping your engine operating efficiently for the life of your car! A radically different motor-oil conditioner discovered by Du Pont helps make this possible.

Developed through 12 years' research and over 4 million miles of testing, new Du Pont M.O.A. is effective under *all* driving conditions. Road tests have shown it extends the life of vital engine parts and saves costly repairs.

Engines rated in lab



Without M.O.A.



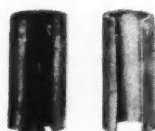
With M.O.A.

In one 48,000-mile test of automobiles operated under severe sludging conditions, engines run without M.O.A. were brought into the laboratory, taken down, and compared with engines operated with M.O.A.

M.O.A.-protected engines were still almost as clean as new, and their oil screens were much cleaner than those in many other engines.

In test engines that didn't use M.O.A., oil lines to rocker arms were repeatedly clogged by sludge. These lines had to be cleaned twice during the test to correct oil starvation. But oil lines in all engines with M.O.A. stayed clean.

Up to 90% less wear



On engines operated *without* M.O.A., camshaft, exhaust lobe wear was found to be up to 10 times greater. Camshaft intake lobe wear ranged up to seven times greater. And rocker arm shaft wear ranged from approximately equal to scoring so badly, due to sludge plugging, that no accurate measure could be made.



You'll notice the difference

Quieter valves, smoother-running engine, gas and oil savings are to be expected with M.O.A. And you may notice that your oil turns dark. This is because M.O.A. keeps microscopic "sludge formers" in circulation instead of letting them grow and stick to engine parts. With M.O.A., dark oil means your engine is being kept clean and bright.

Add a can of new Du Pont M.O.A. to your crankcase at each oil change and feel the difference every mile you drive. Available at your service station, car dealer's or wherever auto supplies are sold.



BETTER THINGS FOR BETTER LIVING . . . THROUGH CHEMISTRY

MOTOR TREND/MAY 1957 13



T-BIRD

owners swear by

AJUSTOMATIC

shock absorbers

More and more owners of high-performance automobiles are demanding what only Gabriel "AjustOmatic" shocks offer:

- Freedom to choose the degree of ride control that is best for your driving habits.
- A choice of three positive settings—soft, normal or firm—to be made in installation.
- A new experience in superior control, safety and roadability for cars of all makes. Yours only with Gabriel "AjustOmatic."

Gabriel
SHOCK ABSORBERS



THE **Rumor** MILL

"Curtiss-Wright Corp. will shortly take over complete control of Studebaker-Packard."

APPEARS LIKELY—Curtiss-Wright is now calling most shots in advertising, is exerting more and more influence as time passes, and may decide to exercise their stock option. Latter course would, in effect, make S-P a C-W subsidiary.

"Chrysler will shortly offer non-slip rear axle as option."

FALSE—as far as this year is concerned, but it's more than likely for 1958. The same goes for Chrysler's experimental fuel injection.

"American interests are seriously considering purchasing European auto firms."

TRUE—Chrysler Corp. is one such interested party; current rumor also has it that Curtiss-Wright is more than a little interested now that auto sales are looking up abroad and especially in Britain, where credit to purchase has recently been eased. Possibility is increased due to 20 per cent of overall sales going to some small imports in certain Latin American market areas.

"More sleek and hot pickup-type trucks are on the way."

NOT CONFIRMED BUT EXTREMELY LIKELY—the impact of the new Ford Ranchero has exceeded expectations and this will almost guarantee similar efforts on part of Ford's competitors.

"1958 Chevrolet models will pop in late spring."

FALSE—this rumor is now out the window; though the '57 Chevy is not as hot saleswise as previously, tooling and other factors will prevent introduction of '58 models until very early fall at least. However, late August or early September is a good bet.

"Pontiac's new sports car will be an out-and-out competition machine."

HALF TRUE—Latest G-2 has it that there will be two versions (family type and a class circuit racing job). Expect this snazzy job to look much like the famed "Bonneville" dream car of '55, only better.

"Integral construction for Chev and Pontiac is now firmed."

FALSE—at least that's the way we hear it now. It's far more likely that GMC's lowest- and low-medium-priced family cars will be on a chassis much like that of the '57 Cadillac—in other words an X-type frame. Both cars will be all new and full of innovations.

"Corvettes will soon have an optional four-speed gearbox."

TRUE—and it won't be long, for Chevy is definitely in the sports-car game to stay (and win races) and no effort is being spared to make the Corvette all that the enthusiast desires. (See "SPOTLIGHT ON DETROIT" for a last-minute Corvette for Sebring.)

"Checker's family car is now available."

TRUE—By the time you read this a few will have been sold. Checker, however, is slightly dismayed at the "too previous" publicity in some sections of the automotive press. Though an official "on sale" announcement has not yet been made, the firm will shortly throw open the door to orders. When this happens, MOTOR TREND has been promised access to a production model for the first genuine driver impressions.

"Fur is about to fly in the big stock-car racing game."

TRUE—Racing associations, which shall be without name for the time being, are having their difficulties with Detroit manufacturers in respect to advertising claims. Though not likely, this could eventually lead to a better break for the average "little guy," who is now virtually out of the game unless he has a six-figure bank roll.

"The '58 Chevy will have a tubular frame."

FALSE—the passenger cars will not, but since the Sebring Corvette SS has a tubular frame, it is not inconceivable that future Corvettes could have.

"Recent anti-drag-strip proposals of the National Safety Council are not being universally swallowed by communities."

TRUE—happily, and the ice is now broken near Detroit where two nearby towns have well-advanced plans for top-notch strips.

car owner's



LIBRARY

MODEL T FORD IN SPEED and SPORT

Compiled principally from the collection of Harry Pulfer. Published by Dan R. Post Publications, Box 897, Arcadia, Calif. \$3.

THIS NOSTALGIA-CONJURING PUBLICATION is a storehouse of historic material on that original hot rod and popular race car, the modified Model T Ford. It is probably the most complete collection of information on this subject contained between two covers. The 224 pages in this paper-bound volume include a history of Model T special equipment, reprints of advertising, do-it-yourself articles, and race records. There are over 300 photographic illustrations and line drawings. The book will be interesting to any car enthusiast, and some readers may be surprised to find basic hop-up techniques were no different in the early twenties from what they are today. —R.S.

Floyd Clymer's HISTORICAL CATALOG OF 1918 CARS

Floyd Clymer's HISTORICAL CATALOG OF 1929 CARS

Published by Floyd Clymer Publications, 1268 So. Alvarado St., Los Angeles 6. \$2.50 each.

BOTH OF THESE BOOKS are reprints of the *Handbook of Automobiles*, which was published originally by the National Automobile Chamber of Commerce. They are actually catalogs of all vehicles manufactured in those years by member firms of the N.A.C.C. and include the more prominent makes of the day. The 1918 catalog lists 207 vehicles and the 1929 lists 148. Both include passenger cars, trucks, buses, and electric vehicles. Each page is illustrated and lists the specifications in a definite order for easy comparison. These paper-bound volumes are a gold mine of information for owners, collectors, and others interested in vintage cars. —R.S.

DRIVER'S MANUAL

THE LAWS OF THE 48 STATES

by Theodore Mattern and Anne J. Mathes

Published by Ocean Publications, 80 Fourth Ave., New York 3. Available from publisher and in bookstores, \$1 for paper-bound edition, \$2 for cloth-bound.

AS THE PREFACE of this 25th number of the legal almanac states, "Thousands of drivers leave the states in which they reside and cross the boundaries into other states... There is a definite lack of information [about traffic laws and regulations in other states] for the operators of private passenger cars. This book is written to fill the gap and to guide the reader through the labyrinth of traffic laws..." Which is just what this 94-page book does, using surveys and charts.

Definitely recommended for the glove compartment of the out-of-state traveler. —W.W.

**DUNLOP
APPLIES**

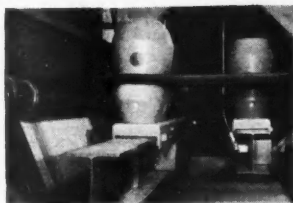
ATOMIC ENERGY for Safer Tires

Thanks to the peacetime atom, the vital heart of the Dunlop tire is strengthened through application of AccuRay... a revolutionary precision nucleonic process.

On cooler running AccuRated tires, you get many extra miles of safer driving. What's more, every Dunlop tire is more perfectly balanced to bring you new stability, control and comfort on super highways or rugged by-ways.

Through AccuRay's precise nucleonic action, an exact amount of protective rubber is uniformly applied to every cord ply. This eliminates two major causes of premature tire failure; the dangerous heat build-up caused by excessive ply-rubber coating and the equally critical ply separation and shearing action between plies resulting when rubber coatings are too thin.

For your own protection, get a matched set of Dunlop AccuRated tires... in Nylon or Super Hi-Test Rayon. See the complete line at your Dunlop dealer's.



Dunlop's AccuRay Process—Electrons, emitted from an Atomic Isotope, scan sheets of coated tire cord, controlling uniform application of select insulating rubber within precise tolerances of $\pm .001$ inch.



YOU'LL GO FARTHER... SAFER ON TIRES BY

DUNLOP

THEY'RE AccuRated®

DUNLOP TIRE AND RUBBER CORPORATION, BUFFALO 5, N. Y.

P. S. Golfers—you'll never know how good you are until you play a *Maxfli*

ATTENTION INSURANCE BUYERS!

...for
DRAG STRIPS
...for
**AUTOMOBILE
RACE TRACKS**
...for
**PARTICIPANT
ACCIDENT
INSURANCE**
AND
**SPECTATOR
INSURANCE**

*We know how to
insure these risks!*

*We devote our entire
time to auto
racing. You may be
assured that we will
do the job properly.
We insure any and all
types of auto racing
events anywhere in
the country!*

WRITE OR PHONE TODAY!

**NATIONAL
RACING
AFFILIATES,
INC.**

N. Perry Luster
10915-E 5. Eberhart Avenue
Chicago 28, Illinois
Phone . . . Waterfall 8-5590

Pete Molson's

GLOVE COMPARTMENT



WHAT HAPPENED?

THE ANSWER to that question (regarding accidents) is the object of study by University of Michigan research engineers. Photos and reports have been made of all major auto crashes in Washtenaw County since 1954. "As soon as critical stretches of highway are identified," says Dr. Bruce D. Greenshields, who directs the survey, "we record those physical features which may influence driving patterns and be conducive to accident situations."

"We will study not only what the driver can see under various conditions, but also what sensations he may feel as a result of road roughness, profile and curvature." Questionnaires sent to drivers are designed to reveal their mental attitude just prior to the accident and any reaction to "danger signals."

NEW FUEL INJECTION SYSTEM

AT ONE-THIRD THE COST of other fuel injection equipment, Jet-Heet, Inc., of Englewood, N. J., announces, as we go to press, the development of a radically new fuel injection system.

The system's simplicity in design is one of its biggest virtues. It has no moving parts in the injector itself. A pump and valve complete the system.

The principle of Jet-Heet's fuel injection system is a vortex or whirlpool chamber in the return flow nozzle that is fitted at opposite ends with two concentric orifices of different sizes. Fuel supplied under pressure to the vortex between these openings discharge through both orifices simultaneously during the injection stroke but only through the larger return orifice at other times. In operation, the return fuel flow, being pumped under pressure, is momentarily interrupted or restricted by means of a simple combination valve that has been designed to control the injection timing. The manufacturer claims operation practically to eliminate valve leakage and inertia problems.

TAX TALE

THE FRANKFORT (West Germany) police recently caught an auto thief whose habit it was to steal—and eventually abandon—a car every Friday when returning home from a drinking bout in his favorite saloon. The police were able to prove that he had done this in at least 40 cases. Time and again, other young Germans have taken home the evening's date in a stolen car, just to show off.

Now the pundits of the Regional Revenue Office have discovered that in accordance with a decision handed down by the Supreme Finance Court in 1929, "illegal use of a motor vehicle makes the offender liable to paying taxes on said vehicle."

Henceforth, auto thieves will have to face

charges of tax fraud, an offense which under the German penal code is punishable by imprisonment up to five years or an unlimited fine. For the time being the authorities will content themselves with exacting from the car thief taxes for at least three months. This is especially stiff when a powerful American car has been taken, since the tax is computed on engine size.

NUCLEAR NOTES

AN 80,000-POUND atomic powerplant for your new car? That's what you'd need, according to Dr. Clayton R. Lewis, Chrysler Corp.'s chief engineer for nuclear research. Dr. Lewis' "optimistic estimate" did not, however, close the door completely. "Indirect propulsion of automobiles from nuclear generated power would be very attractive. Such an invention would, in all probability, completely change the automobile and allied industries as we know them today."

FRENCH FUTURE

RENAULT'S Dauphine will have a bigger sister (much bigger). The four-door hardtop—at least, that's the currently planned body—is not scheduled for some time, but when it gets into production it will have a 91-cubic-inch (1500cc) air-cooled flat four at the rear. Automatic transmission, four-wheel disc brakes, air suspension are some of the other delights of this beautiful car that could prove a serious worry to Detroit.

UPS AND DOWNS

THE SALES PICTURE is full of surprises this year, to us among others. Remember Don MacDonald's "Ulcers on Mahogany Row" (March MT)? Our prediction of No. 4 spot for Plymouth seems to have been "way off. Plymouth now has a comfortable third, and Buick is preparing a Century four-door sedan to sell for \$112 less than the corresponding hardtop and help regain some of the lost ground. Ford, too, might come up with a surprise in this game of musical chairs before long.

FALL-OUT

\$8800 Armstrong-Siddeley limousines will soon be on sale in 25 U.S. cities, reports the *Wall Street Journal*. . . A rotary valve and fuel injection conversion can raise the output of Australia's little Holden to 150 bhp at 7000 rpm. . . The disastrous Jaguar fire that destroyed 257 cars, all the spare parts, and a third of the factory back in February, was apparently the doing of a forgotten cigarette butt. As in the GM Hydra-Matic plant fire at Livonia, Mich., the roof material had a high percentage of asphalt, but the Jag plant for some strange reason had no sprinkler system. . .



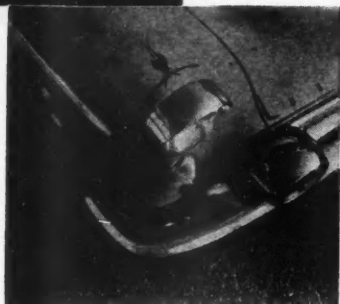
New Products MAIL MART



SPECIAL of the MONTH

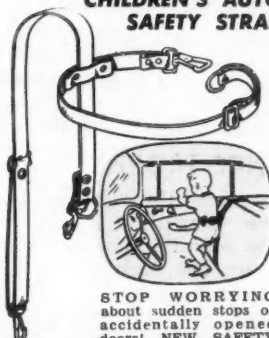
Custom Striping

Stripe your car for as little as **\$195**



Now you can customize your car in the very newest California fashion... at a fraction of the cost of hand striping. Save \$30.00... it's easy to apply genuine "CUSTOM-STRIPING" decals. Arrange any way you like. Original designs by Harbeck. Each set available in white, rich red... or gold. Specify set and color wanted. Item 1. PPD.
Set "A"—For headlights, dashboard, other beauty touches... \$1.95
Set "B"—Like set A plus 8 extra designs for the center of the hood, corners of rear deck, etc... 2.95
Set "C"—Complete Deluxe stripe kit for your car—24 designs... 3.95

IT'S HERE — CHILDREN'S AUTO SAFETY STRAP



STOP WORRYING about sudden stops or accidentally opened doors! **NEW SAFETY STRAP** holds children firmly—yet permits complete freedom of movement: active boys and girls can sit, stand, or kneel. They're held safe in any position. Installs **EASILY** in any car—"snap" it in—no tools needed—does **NOT** require cutting upholstery. For children 1 to 10. Also holds unruly pets. Only \$3.75. Item 3. PPD.

SHRUNKEN HEAD

"Life" of the party. Hangs from car mirror. Ideal for rumpled room. A "thoughtful" gift. Remarkable imitation of South American shrunken head. 8" long, with silky hair. Skin texture rubber head. \$2.98. Item 10. PPD.

Smaller Cheaper Head 4" long (not shown) \$1. Item 11. PPD.

MILEAGE MINDER

SAVES UP TO 6 MILES PER GALLON OF GAS!



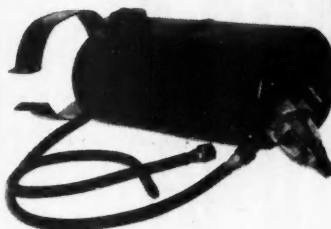
TRIPLE THREAT AGAINST GAS WASTE. Saves gas—reduces carburetor wear. Pressure regulator and pulsation dampener stops stalling, rough idle and vapor lock. Porous bronze filter removes water and dirt. Produces smooth flow of clean fuel. Greatly improves mileage. \$6.95. Item 4. PPD.

HOLES FOR AIR-FLOW



STOP GAS WASTE due to carburetor "thirst." Gane Air-Jet Needles compensate for over-rich idling mixture—stop "flood" of raw gas. Users report 3-6 extra miles per gal.—no help if carb. "perfect." Try 10 days—full refund if not amazed. State make of carburetor (8-cyl. cars take 2). \$1.50 each. Item 7. PPD.

You'll NEVER run out of gas again NEW RESERVE TANK Holds emergency fuel supply



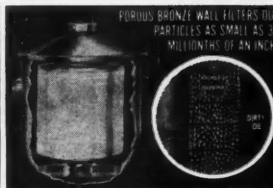
OUT OF GAS?



Girls! Don't let this happen to you. **INSIST** that your boy friend install a **NEW RESERVE FUEL TANK TODAY!**

Order this today... might save a nice long walk sometime. Out of gas? Just lift your hood, turn the auxiliary valve... presto! you've got ample supply to get you to the next service station. Reserve tank hooks up to fuel line just ahead of fuel pump. Complete with 3/4 gallon steel tank, porous-bronze fuel filter, flexible gas line, brackets for easy mounting in any make car, plus necessary fittings. Best of all, the price is only \$3.95. (Filter alone is worth that.) Item 2. PPD.

POROUS BRONZE WALL FILTERS OUT PARTICLES AS SMALL AS 20 MILLIONTHS OF AN INCH



PERMA-BRONZE Oil Filter—economical... yet **FULL SIZE**. Porous bronze element never needs replacing. Easy to clean. 10-year guarantee. With acid neutralizer. Fits car's filter case. "By-pass" element \$4.95; "Full-flow" element \$8.95; Complete case with "By-pass" element \$10.95. Item 5. PPD.



Engine suffering from "ACID indigestion"? Oil swarming with microscopic abrasive flecks? Replace your crank case drain plug with **NEUTRA-PLUG**! Active alloy element neutralizes corrosive acid. Powerful Alnico magnet captures metal grit. Standard model \$2.45. Deluxe model \$2.95. Item 6. PPD.



HOLT'S A RING JOB IN A TUBE. MORE ZIP for the old bus! New life and power for that sluggish engine. Just unscrew spark plugs, squeeze Holt's into holes. Forms self-expanding seal. Boosts compression, cuts oil waste, ends piston slap. Lasts up to 10,000 miles. Only genuine "Holt's" insured by Lloyds of London. \$4.95. Item 9. PPD.



ORDER BY MAIL TODAY! Satisfaction guaranteed or your money back. Send currency, check or money order and we pay postage on items marked Ppd. Others F.O.B. Los Angeles. 20% deposit required on C.O.D.s (no C.O.D.s outside U.S.A.). California customers please add 4% Sales Tax.

5805 E. Beverly Blvd., Dept. 722, Los Angeles 22, Calif. Phone RAymond 3-3671

Gentlemen: Please rush me the items circled at right: 1 2 3 4 5 6 7 8 9 10 11

My car is.....Year.....Model.....No. Cyl.....

Name.....

Address.....

City.....Zone.....State.....

\$.....

Full Price Enclosed

\$.....

20% Deposit. Send C.O.D.



Giant new catalog sent **FREE** with order (otherwise send 35c to cover postage, handling).

PURE-PREMIUM GASOLINE SETS 30 NEW RECORDS AT DAYTONA BEACH

Look at the variety of these records just set at the NASCAR International Safety and Performance Trials—for acceleration, endurance, power, performance. Every record was set with Pure-Premium, the gasoline that holds more official NASCAR records than any other gasoline. Try it in your car for record performance, too!



CHEVROLET WINS PURE OIL

PERFORMANCE TROPHY

Every year the prized Pure Oil Performance Trophy is awarded to the manufacturer whose cars score the highest number of points in competitive events at the International Safety and Performance Trials.

RECORD HIGHLIGHTS*

Grand National Championship Race, NASCAR—Cotton Owens, Spartanburg, S.C., 1957 Pontiac, 101.60 mph.

National Convertible Championship Race, NASCAR—Tim Flock, Atlanta, Ga., 1957 Mercury, 101.32 mph.

Two-way Flying Mile, NASCAR—U. S. Production Passenger Cars: Class 6—Joe Littlejohn, Spartanburg, S.C., 1957 Pontiac, 131.747 mph; Class 5—Paul Goldsmith, St. Clair Shores, Mich., 1957 Chevrolet, 131.076 mph.

Two-way Flying Mile, NASCAR, Big Three—Al Simonsen, Cambridge, Wisc., 1957 Chevrolet, 118.460 mph.

Acceleration, Standing Mile, NASCAR, U. S. Production Passenger Cars—Class 7—Brewster Shaw, Daytona Beach, Fla., 1957 Chrysler 300-C, 86.873 mph. **Class 6**—Jim Stonebraker, Fairview Park, Ohio, 1957 Pontiac, 85.308 mph. **Class 5**—T. Winston Parker, Williamsburg, Va., 1957 Chevrolet, 85.006 mph. **Class 3**—Robert Reed, Orlando, Fla., 1957 Nash Rambler, 64.795 mph.

Two-way Flying Mile, NASCAR Prestige Class—Ernie Walls, Indianapolis, Ind., 1957 Lincoln Continental, 108.860 mph.

SPORTS CARS—Two-way Flying Mile—Class B—Modified—Danny Eames, 1957 Modified Ford Thunderbird, 160.356 mph average. **Class C—Production**—Paul Goldsmith, 1957 Chevrolet Corvette, 131.941 mph average. **Class D—Modified**—Phil Stiles, 1956 Austin-Healey, 134.756 mph average. **Class F—Modified**—Bill Buff, 1956 Porsche Spyder, 135.491 mph average.

SPORTS CARS—Standing Mile Acceleration—Class B—Modified—Danny Eames, 1957 Ford Thunderbird, 97.933 mph. **Class C—Production**—Paul Goldsmith, 1957 Chevrolet Corvette, 91.301 mph. **Class C—Modified**—Buck Baker, 1957 Chevrolet Corvette, 93.047 mph.

*Some Modified and Qualification records not listed here.

NOW, MORE THAN EVER,

BE SURE WITH PURE



LAST YEAR MOTOR TREND magazine established an award that was to be given annually to the automobile manufacturer who—in our opinion—had made the most significant advancement. In a year of many such advancements, it takes a very thorough study of all cars before a final decision can be reached.

One point that should be emphasized is that this award *is not* necessarily an engineering award, nor a safety award, nor is it for any other particular category. If you must give it an adjective other than MOTOR TREND, you can use the word—achievement.

OUR INTENT is to present this award each year, but with the proviso that some manufacturer must have made a noteworthy achievement on a standard production car—whether it is an

Continued on page 54

1957 MOTOR TREND AWARD

CHRYSLER
CORPORATION

for
SUPERIOR HANDLING

CHRYSLER WINS!

CHRYSLER
IMPERIAL

**MOTOR TREND'S ANNUAL ACHIEVEMENT
AWARD GOES TO CHRYSLER FOR SUPERIOR
HANDLING AND ROADABILITY
OF ALL THEIR CARS**

'57 CHRYSLER

ROAD TEST



THIS ONE HAS A HAPPY MARRIAGE OF RIDE, PERFORMANCE, AND HANDLING

THROUGHOUT ITS EXISTENCE, Chrysler has been a consistent leader in American automotive engineering. The four-wheel hydraulic brake, high-compression engine, automatic overdrive, one-piece curved windshield, fluid drive, power-operated convertible top, full-time power steering, and the hemispherical-combustion-chamber V8 engine are only some of the firsts that Chrysler has incorporated into quantity production cars.

CHRYSLER'S 1934 AIRFLOW was the most advanced American car of its time, having such features as passenger seating between the axles, large-cross-section super cushion tires, streamlining and tremendous performance. Within the first three months after its introduction, the Airflow captured every closed-stock-car record from one kilometer up to the unlimited class and 72 speed records on the Utah Salt Flats. The fact of its rejection by the public and its dismal sales record is attributed to a lack of sufficient knowledge and education on the car buyer's part, and production delays, which caused spread of the rumor that the car had faults that were not yet licked. A public still reeling from a major depression was in no mood to take a fling on what looked like an experimental car. For too many years thereafter, Chrysler concealed its engineering advances under body shells of the stodgiest type. The dependable engine was still there, together with riding comfort and a well-assembled whole, but visible changes in body design were virtually completely lacking in consumer appeal.

BUT NOW THE WORM HAS TURNED! Chrysler Corp. automobiles—throughout the five lines—have this year undoubtedly captured the lead in body design. The "wedge," "dart," call-it-what-you-will shape—which started in 1955—is a new concept, not just a re-do or face-lift. Cartoonists and jokesters throughout the country are having a field day, but Chrysler people are laughing much harder than their competitors. What seemed like a daring gamble—two major body changes within three years—is paying off.

OUR TEST CAR was a New Yorker two-door hardtop with full

power equipment; an engine displacement of 392 cubic inches; compression ratio of 9.25 to 1 and brake horsepower of 325. The wheelbase is 126 inches, with an overall length of 219.2 inches. The transmission, of course, is fully automatic, with pushbutton control on the dash.

Body assembly, finish and trim vary from average to good, with the car somewhat lacking in that rock-solid overall feeling earlier Chrysler owners took so much pride in. Still, nothing showed a desire to fall off, which has been found in other cars.

The interior was pleasant and well finished in nylon and synthetic leather; the dash was padded. Instruments are grouped for quick reading, and the coloring and contrast of needles, numbers and background are good. There are no annoying paint or chrome reflections, but the cigarette lighter, ashtray and small glove compartment are too far from the driver to be convenient.

THE SEATING POSITION in front is very comfortable, and has the six-way power-controlled seat, adaptable to fit just about any driver's specifications. The wheel, while not adjustable, is set low and in, making it unnecessary to peer through the spokes. There are few driving positions as funny to look at, or as unhappy to be in, as that of the little man or woman "sighting" through the wheel and down a long hood. A machine gun in place of the radiator ornament would seem appropriate in such cases.

Visibility is excellent all around except for two built-in items. One could be quite annoying—extreme distortion at the cornerposts of both the windshield and the rear window. The other is only a matter of driver adjustment. If you drive as we do, you not only use the rear-view mirror before switching lanes, you also take a quick glance over your shoulder. Twice we hurriedly pulled back into our own lane, having seen what we thought was another car just off our stern. Turned out to be our own fins!

Back-seat passengers will more than enjoy the full wraparound rear window. It's quite a luxurious feeling to lean far back in the seat, look up, without craning the neck, and watch

clouds, birds, airplanes, or what-have-you float by.

THE RIDE, as expected, is soft and smooth with no body lean, bouncing, or wallowing. It could be quieter, however, if the engine compartment had sound-deadening.

The standard accessories—heater, radio, defroster, etc.—work easily and efficiently. There are no excessive drafts, and only the heater fan provides an unnecessary noise. The car also had optional safety belts, which, for the hundredth time, we heartily recommend.

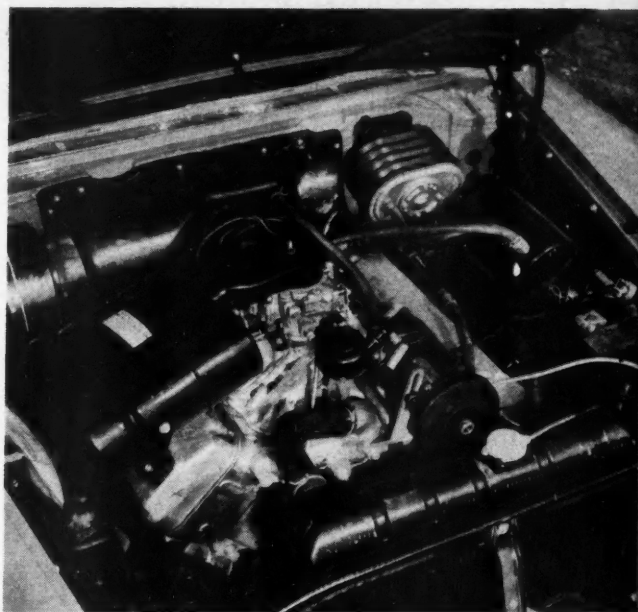
The throttle and power brake pedals are well located. Right or left foot can easily be used on the brake, and only a heel pivot is necessary when going from throttle to brake.

THE POWER STEERING, with $3\frac{3}{4}$ turns from lock to lock, is one of the most sensitive and positive it has ever been our pleasure to drive. Power steering, from its introduction, has had to be sold to us, but this system we would gladly ask for. There is never that disconcerting, wishy-washy, who's-driving-whom feeling. Steering response is very quick and the operation is completely effortless despite the weight of the car.

Legroom, particularly in the back seat, is short of adequate

AN MT RESEARCH REPORT

by Otto Zipper



LIKE MOST CARS furnished with power equipment, engine compartment is so crowded some service and adjustment points are difficult to reach.

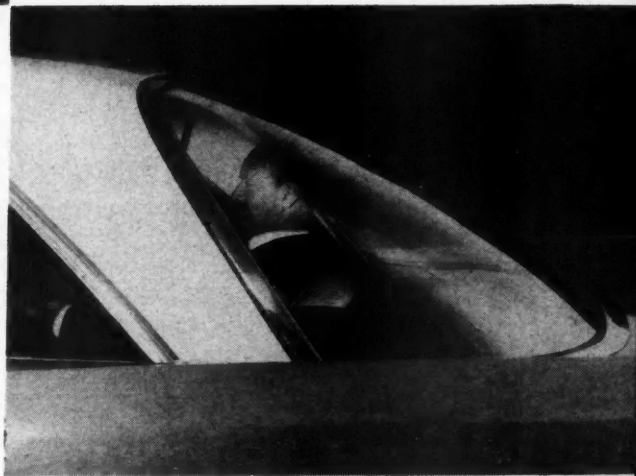


WALK-IN SIZE TRUNK will prove a boon to those with lots to carry. To many, it will be wasted space that could have been used in the passenger compartment. Spare located within easy reach.

WRAPAROUND (and almost over) rear window almost provides rear seat passengers with transparent roof vision. Usual unavoidable distortion is present at sides.

in the two-door. Even relatively short trips of, say, 40 miles can give the rear-seat passengers the squirms, and a really long jaunt could become a real annoyance. And, unfortunately, this cannot properly be called a six-passenger automobile. The driveshaft and transmission tunnels are still regarded as essential parts of the car, and their location eliminates the possibility of comfortably seating an adult in the middle of either seat. (The four-door sedan, with an additional eight inches in the rear compartment, is another matter.) This, of course, is the penalty paid for the extreme lowness of the car, and is characteristic of the current styling trend. The same feature is responsible for an increasing occurrence of bumped noggins and knees. The Chrysler wraparound windshield is easy enough to negotiate, but the roof provides a hazard, as can the wheel, particularly when the seat is forward. This lack of leg, head and seating room is, in varying degrees, common with most all the 1957 cars.

But if you want to know where all that 219.2 inches in over-all length goes, just look under the hood and in the trunk. The



'57 Chrysler

continued

engine compartment is, actually, crammed full. Accessories such as power brake and steering equipment, vacuum tank, heater and motor, to say nothing of a little matter of 392 cubic inches of engine, make the space rather well used. It is not, however, the most easily accessible engine, simply because of all the accessory equipment. Spark plugs, particularly on the right bank, are a real chore to get at.

The trunk, on the other hand, is one of the largest now being wheeled around the countryside. Full utilization of the space available will be rare. Why, then, you ask, didn't Chrysler make the trunk smaller and the rear compartment larger? Frankly, we're asking the same question, although it would seem to be a concession to the esthetic properties of this particular body. It is hoped, however, that future consideration will favor the back-seat passengers rather than the suitcases.

These drawbacks, however, fade into relatively minor importance when compared to the car's overall advantages.

While the new bodies and the thrill of guiding tremendous power may be selling the cars presently and causing all the furor, there is a more mechanical feature that should keep the customer coming back long after the novelty has worn off: without question, the inherent riding and handling qualities of this car are the best to be found on any large family automobile, whether it be domestic or foreign. Bad dips, rough roads, twisty roads, heavy traffic with its sudden stops and starts, right-angle turns, switchbacks, high speeds, low speeds—all were negotiated with ease and increasing confidence. It was actually difficult for us to believe that this large, heavy, soft-sprung automobile could perform with the agility and solidity of ride that we found.

After the initial miles of driving (the car, incidentally, had 1402 miles on the odometer to start) and marveling at its ease of handling, we became even more impressed once on the open road. The car has not the slightest tendency to wander or weave, even at speed, and there is that good feeling of always being "with" the car. We drove at speeds up to 100 mph over dips of varying depths without ever bottoming or losing a fraction of control. One of these dips had a sign warning that the safe speed limit was 45 mph; this we took at 75. Recovery was almost instantaneous and the car followed a straight line, without bottoming and under complete control.

CORNERING ABILITY is, in many ways, comparable to that of a sports car. The lean in sharp, fast turns is held to a minimum, especially for a car of its size, weight and nose heaviness. We drove the car at 50 mph into a 90-degree turn and quickly

received one bad shock and one pleasant surprise. First, after heading into the turn, we dropped into a lower gear (2) and were all set to power out only to find that the four-barrel carburetor had completely washed out, leaving us with no power whatsoever. You can imagine our feelings at that moment. But then came the surprise. Although traveling at a much higher speed than one would deliberately use to take such a sharp turn "dead stick" (and we rather expected, at that point, to do a little cross-country touring) the car almost unbelievably took the turn without either sliding or plowing. Just imagine going into a right-angle turn at 50 mph, cutting the ignition, and then coming out under momentum alone without either swapping ends or clearing a path sideways through the sagebrush! This alone convinced us of the car's vastly superior handling qualities, for it was no lucky fluke. We tried it again, with the same amazing result. Actually, the momentary fuel starvation should not have come as a shock, since we had experienced it before with other makes equipped with this type carburetor.

Amazing, also, is the practically complete absence of brake dips in sudden stops. And there is very little road noise or kickback from rough surfaces—streetcar tracks, washboard-type paving, etc., are all smoothed out. The wheel recovers instantly if suddenly whipped to one side, and the car will follow a straight line like a hound dog on scent. Not even wind gusts or changes in pavement will have much effect.

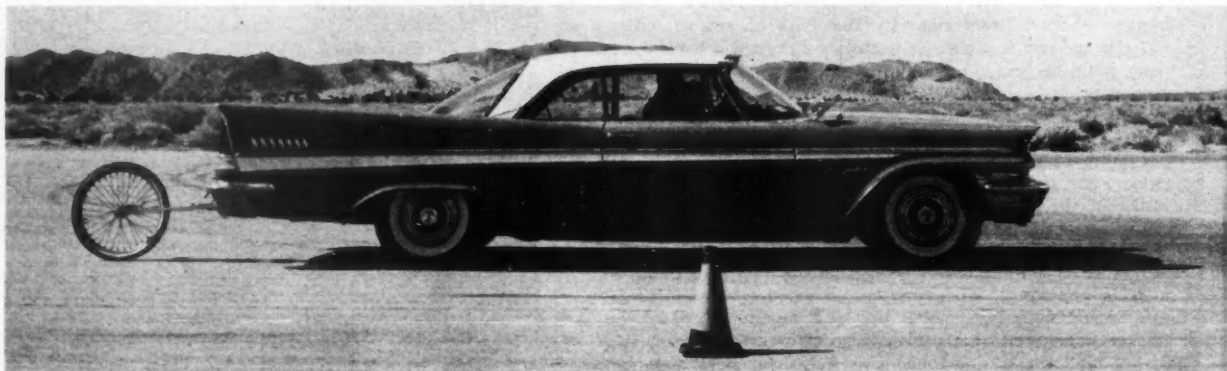
The car feels, and is, safe at speeds much higher than any sensible motorist will ever attempt.

The secret behind all this is Chrysler's torsion-bar-ball-joint front suspension, the outrigger-mounted rear springs of very special design, the excellent new Oriflow shock absorbers and the low center of gravity in overall conception.

THE BRAKES ARE VERY POWERFUL and bring the car to a quick, safe stop, if not used too often in succession. However, frequent and severe use causes very bad brake fade. On our acceleration runs, we used the brakes only in a normal manner to slow from 80 mph to about 15 mph. That is, we did not make any panic stops. About two minutes' time elapsed between such brakings. After the 12th run, the fade was so bad we had to use the hand brake (which worked excellently, by the way) and then allow the brakes a cooling-off period before continuing the tests. It took almost eight minutes before the brakes were back to normal. In this respect, Chrysler is no worse than others in the domestic industry. As we pointed out in our Pontiac test (March MT) the 14-inch wheel just doesn't give the brakes much chance to cool.

THE TORQUEFLITE TRANSMISSION has three speeds forward. The lower forward gears (buttons 1 and 2) are used for engine braking on steep downhill grades. In the D range, starts

PHOTOS BY BOB D'OLIVO



POISED for acceleration runs with fifth wheel attached. Device proved car speedometer amazingly accurate.

'57 PERFORMANCE

(325 - bhp engine, 3.18 rear axle)

REAR-WHEEL HORSEPOWER

Clayton chassis dynamometer showed:

84 road hp @ 2200 rpm and 24 mph
116 road hp @ 2500 rpm and 30 mph
135 road hp @ 3000 rpm and 50 mph

SPEEDOMETER ERROR

Read 30 at true 30, 45 at 45, 50 at 50,
60 at 60, 75 at 75, 80 at 80

ACCELERATION

From Standing Start

0-45 mph 6.2 0-60 mph 9.8
Quarter-mile 17.3 and 81 mph

Passing Speeds

30-50 mph 3.6 45-60 mph 3.5
50-80 mph 9.25

FUEL CONSUMPTION

Using Mobilgas Special

Steady Speeds

20.2 mpg @ 30 18 mpg @ 45
16 mpg @ 60 13.2 mpg @ 75

Stop-and-Go Driving

15.8 mpg tank average for 420 miles

OIL CONSUMPTION

None added in 500 miles

'56

(280 - bhp engine, 3.54 rear axle,
air conditioning)

Read 30 at true 30, 48 at 45,
64 at 60, 81 at 75

From Standing Start

0-30 mph 4.7 0-60 mph 12.3
Quarter-mile 18.8 and 75.5 mph

Passing Speeds

30-50 mph 4.7
50-80 mph 13.7

Using Mobilgas Special

Steady Speeds

19.0 mpg @ 30 17.2 mpg @ 45
13.7 mpg @ 60 11.2 mpg @ 75

Stop-and-Go Driving

14.9 mpg tank average for 626 miles*
*3.36 rear axle

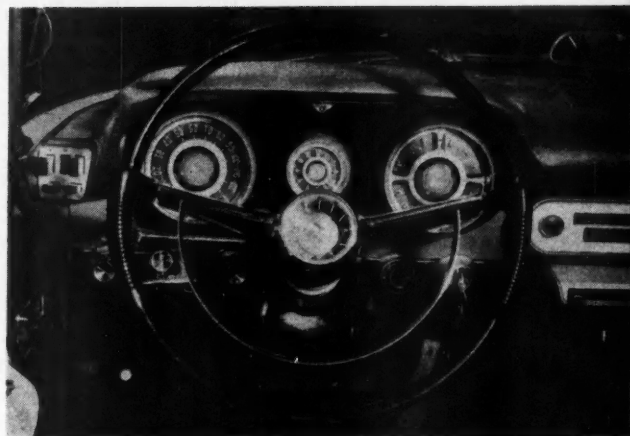
are made in first and the following shifts to second and third are beautifully smooth, as is the downshift when second is engaged as a passing gear. When slowing down to a stop, second gear is automatically skipped and the engagement of low gear is not felt. The sudden lurch so unpleasant on some automatic transmissions is therefore completely absent. Harming the TorqueFlite is quite difficult even if the wrong button is pressed at speed. Pushing reverse while driving will just throw the transmission into neutral, while pressing low (1) over 22 mph or (2) above 70 mph will have no effect at all. When starting out in D range under full throttle, the shifts are from first to second at 40 mph and from second to third at 75 mph.

THE PERFORMANCE of the car is right with the best of the family sedans. The 392-cubic-inch engine (the largest in production) moved the 4560-pound automobile from 0-60 mph in 9.8 seconds, and the standing 1/4-mile was covered in 17.3 seconds at 81 mph. These were the average times from three runs in each direction. We'd like to mention at this point that the runs were made with a fifth wheel and electric speedometer and that the car's speedometer was accurate to the mile! Its top marking is 120 mph and we approached this without undue strain. Were it not for the accuracy of the speedometer, it would be easily possible to bring the needle around and start all over again. You don't have to be an optimist—the car does what it shows.

For the driver who is not the type to run cross-country races but, rather, drives sanely through cities and over highways, the engine will feel as if it were on just a fast idle—smooth and responsive at all times.

THE FUEL ECONOMY will be between good and excellent. Our average tank mileage for 420 miles, town and highway driving, produced an astonishing 15.8 mpg.

We have, in these road tests, tried always to bear in mind the initial purpose of the car. The Chrysler New Yorker is, and probably always will be, a family sedan, not a race or sports car. While it may not be the ultimate in its class in ALL departments, it still comes out with the best, and its successful incorporation of high performance factors, tremendous ease of handling, and safety through excellent roadability makes it most astonishing and desirable.



STEERING WHEEL is located for a good see-over look. Readable instruments can be swept with a quick glance.

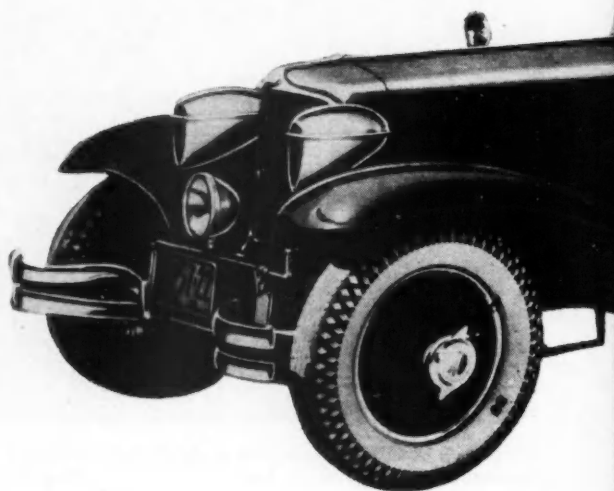


PART OF REAR FIN, when first sighted in the mirror, may possibly shock you into thinking it another car.

"Once Upon a Time . . .

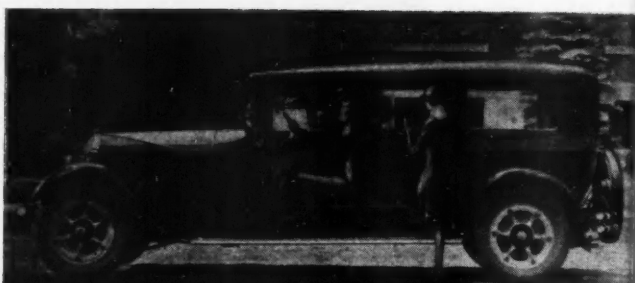
. . . As business slumped from a bad year to a worse one and famine threatened the realm of motordom, one small automobile company stepped out boldly against the field and tripled its sales . . ." So reported a 1931 Wall Street publication, now defunct, about the Auburn Automobile Co., of Auburn, Ind. Long before the Depression, Auburn had distinguished itself in more than one spectacular coup. Its progenitor, Charley Eckhart, made carriages and was obsessed with one idea: that there existed a good market for a better buggy, sold cheaper than those of his competitors. He located at the edge of an Auburn cornfield in 1874, and from there he peddled his buggies for \$99. He prospered handsomely, since that figure was about half that asked by his competitors. The limousine at right would much later be priced at a comparative level.

WEIRD WISDOM



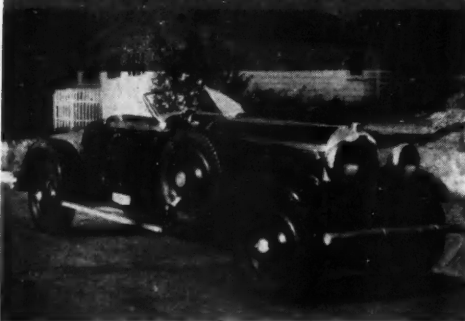
Great Expectations

Charley's two sons, Frank and Morris, were fascinated with the new auto buggy toy. They finally pried from him his grudging consent to use a corner of the shop to assemble their first car. That was in 1900. That first Eckhart car had hard tires and a one-lunger engine. By 1903 they were producing 50 a year. Soon there appeared in Auburn several more car companies. It is said that more cars were turned out per day in Auburn than in Detroit! By 1919 the Eckhart brothers had sold out to a Chicago financial group. For four years the company limped along as though on the original one cylinder. Then they hired Roy H. Faulkner to head up sales. Within four months the spectacular and youthful Errett Loban Cord was to make his appearance in the wings, and the L-29 Cord (above) and the Auburn speedster (right) waited with him.



by Richard H. Robinson

Former editor for Auburn and Cord,
now deceased.



***Some improbable high—and low—
points in the little-known saga of***

AUBURN and CORD



THE STYLING DEPARTMENT at Auburn in 1935. The single-seat, 265-hp "Gentlemen's Speedy Roadster" (rear) was crash-padded, and is flanked

by the author (left) and Gordon Buehrig. Note various models of the Cord 810 and, right, "economy" Duesenberg, whose louvers went to Cord.

Enter E. L. Cord

Cord had (alone) sold more Moon cars than all the Moon *dealers* in five Midwestern states. His secret was customizing. For very little money, he would doll-up a car and get a price as high as \$300 over list. He invested his earnings by buying into the Chicago Moon agency; finally its owner bought him out for \$60,000.

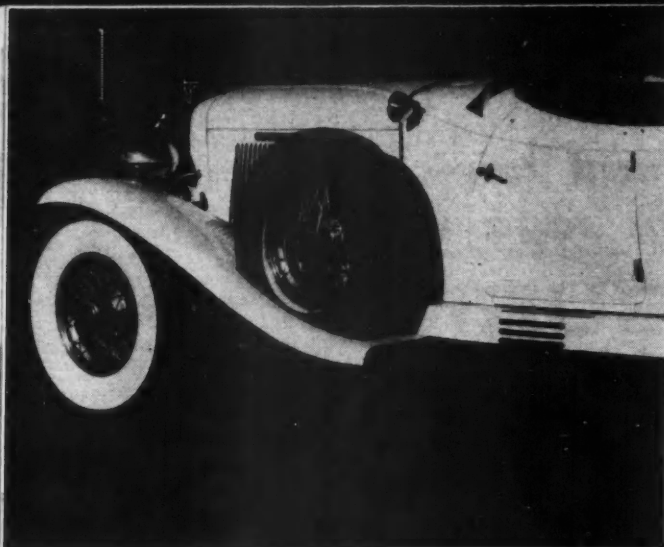
Meanwhile, back at Auburn, sales were tobogganing, and the Chicago group was looking for some genius to bail it out. Cord's entry was unassuming; he took the title of general manager.

His first move was to reinstate the English Coach, a customized touring car. The cornfield back of the plant

was full of antediluvian touring cars that couldn't be moved. Cord had one of the plant carpenters cut down the roof bows. The headroom had to give way in a desperate gamble to put some moxie into the cars. Enough nickel-plated moldings were found in the plant to kill off the funeral look. All the cars were sold.

Cord now had some cash, and made a deal with Lycoming for eight-cylinder engines. He asked his chief engineer, Jim Crawford (who later became chief engineer of Chevrolet) to install one in the six-cylinder chassis. Jim let out a cry of anguish, but the car was an instant success. Cord invested in body dies, assumed the presidency, and quietly bought up Auburn stock. In 1928 he inaugurated a program to build a front-drive car.

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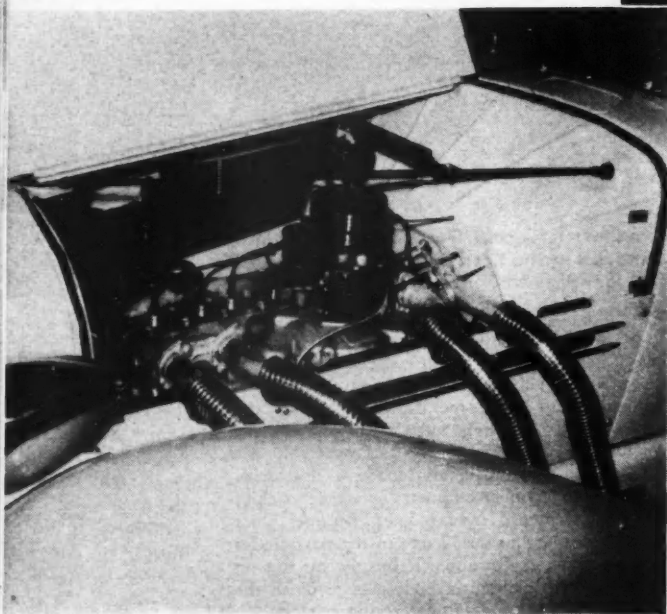
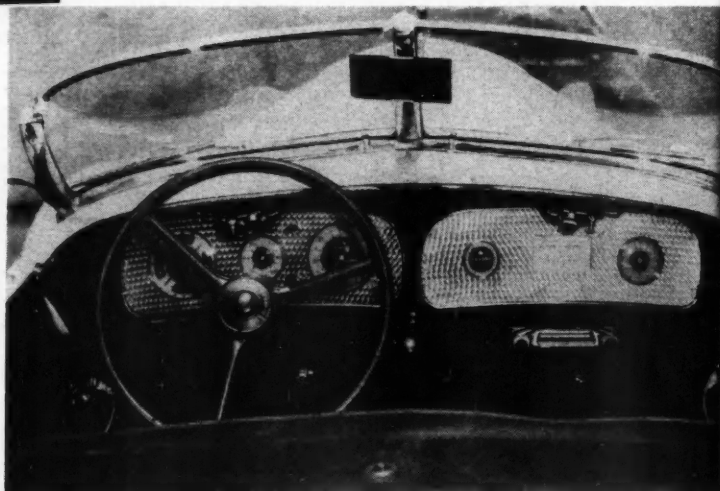


Leamy and the L-29

The famed classic L-29 Cord was the result. The three top men on it were Cornelius Van Ranst, chief engineer; Harry Weaver, engineer; and Al Leamy, stylist. They cooperated with Harry Miller on the design of the front-drive elements. In a day when cars were built high and ungraceful, with passengers riding regally in the stratosphere, the L-29 had a low, lean, fast, hungry look. It won ecstatic acclaim at all the American auto shows and 39 major awards in foreign shows. The first car off the line, by a devious route, found itself at one of our automotive cousin's in Detroit. We were told later by the grapevine that when the car came off the elevator in our competitor's plant men were swarming around it, making templates almost before it had stopped rolling! In this same year, Al Leamy designed the 1930 Auburn speedster (left), whose descendants would be even more sought after.

AUBURN and CORD

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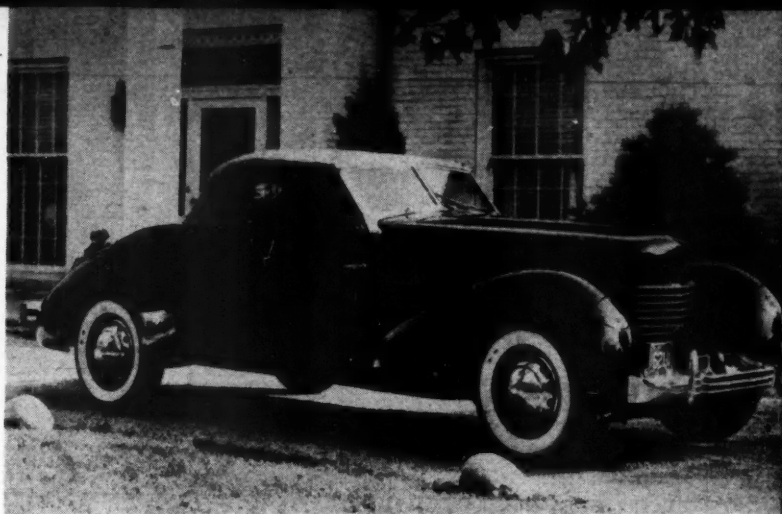
Successful Speedsters

The original speedster's body was made largely by power hammer and stretch press operations with a beggar's list of tools. Soon dealers were clamoring to get in. Auburn stock, with an original par value of \$6 per share, was climbing past the \$500 mark. We were honored to be investigated by the New York Stock Exchange's current Joe Friday, but were given back our only clean shirt. Business continued at a sizzling pace through 1931. Then Studebaker lured Roy Faulkner away as vice-president of Stude and president of Pierce-Arrow Sales, at many times his Auburn salary. Cord's interests took him far afield. In 1934, Auburn laid a gigantic egg at the New York show. It was indeed a black year for us. Duesenberg fell on evil days, for no longer was it stylish to ride in a block-long car when people were picking crusts out of the dumps. And no longer was it built as in the days of Fred Duesenberg. Harold Ames was head of Duesenberg, and Gordon Buehrig was his chief stylist. They were transferred to Auburn in 1934. Roy Faulkner returned in August of 1935. Buehrig and I redesigned the egg-laying 620 and 820 into the refurbished 652 and 852, which looked like the '35 speedsters. The glove compartment door plate (above)

Shenanigans

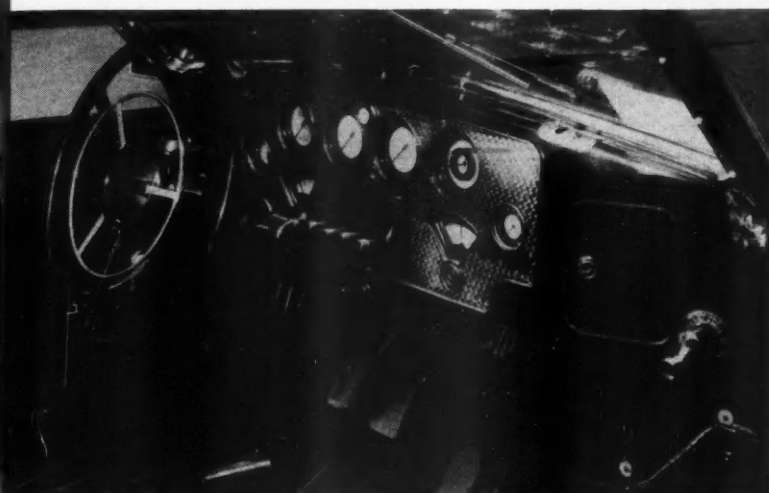
... attested to the fact that the late Ab Jenkins had driven a carefully honed and babied speedster over a measured mile at 115 mph, plus some decimal. The intention was to have an engraved plate on each instrument panel certifying this, even though the average one clocked between 102 and 106 mph. We kept the 115, with varying fractional values. One day I was walking down the body assembly line, and there in front of my eyes was a workman energetically tacking plates on the instrument panels, though the bodies still had not been mounted on the chassis!

When Gordon Buehrig transferred to Auburn, he drove up in his proposed Duesenberg model. Among its excellent design characteristics were the Venetian blind louvers between the hood and fenders. It was the embryo Cord 810.



Midnight Gamblers

Gordon and I started a clay scale model, based on the front-drive principle. We had no authorization from anyone; this was to be our baby. Mr. Ames wanted us boys in the styling group to work on a Duesenberg model, to salvage the honored name at \$1200 a copy. To us it savored of downright sacrilege, and we worked on the Cord until Ames forbade it. Gordon said to me, "What do you say we come back at night?" We did. When the model was completed, Dale Cospers brought in his miniature camera one night and photographed it. Prints were shipped overnight to Chicago for a directors' meeting, and next day Cord wired back, "Start tooling immediately!" So was born a car that had the industry gnawing its nails and shaking its head sadly. Now that we had the go-ahead, we didn't have time for the fancy full-sized models they build today. We went directly to full-size drawings, with time out for a seating buck to let us know if we could put people inside.



Flash of Glory

The A.M.A. insisted that we have a full complement of cars for *all* the shows. We had only seven months, so we hired all the sample metal men available and pounded out 25 hand-made models at \$25,000 apiece. The boys used lead by the bucketful. We couldn't get the convertible top to work, so we made a dummy, folded top of plywood, stretching the boot over it. The 810 had the first frameless construction in America, and on a rough road, the convertibles' doors popped open as if they were controlled by an electric eye! There was nothing to do but throw a lot of iron underneath. The New York show was our reward. Automotive writers and the public had no eye or praise for anything but the Cord. One of the Big Three had its exhibit across from ours at the Chicago show. People were standing on its fenders and hoods, peering over at the Cord. Thousands of cash orders piled in, but Cord had liquidated most of his holdings. One day in May, 1936, everybody was fired and we came to a bloody and glorious end.



FINS IN FRONT! Could this be the forerunner of a reverse wedge shape? Interesting coachwork by Vignale is on Lancia Appia, Series II chassis.



IT'S NEW CAR SEASON

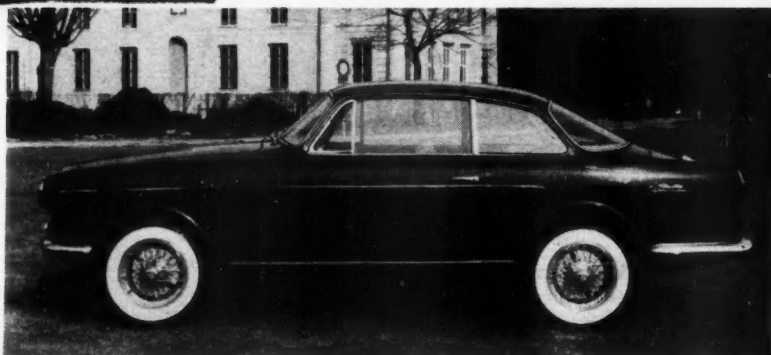
THE NEW AND THE UNIQUE
ON THE FOREIGN CAR SCENE



SLEEK AND SMOOTH exterior of Goliath 1100 covers new light-weight, four-cylinder, flat opposed, four-stroke, 40-bhp engine.

ANOTHER EXAMPLE of the smooth and simple is this Vignale body on the popular Fiat 1100 chassis.

BRITISH MOTOR CORP. officials here examine scale model of an Austin designed for turbine propulsion.



TO FILL a previously unoccupied gap in their American market, Jaguar has come up with a high-performance sedan designated as the 3.4 (see contents page photo). The new Jag is essentially similar to the 2.4 sedan with the big exception that the 210-bhp, 3.5-liter XK engine has been used in the smaller chassis.

Evidence that Austin is giving thought to practical styling for a turbine car is presented on this page. When manufacturers are ready to present the turbine to the public, there probably will be functional styling changes in keeping with the new propulsion method.

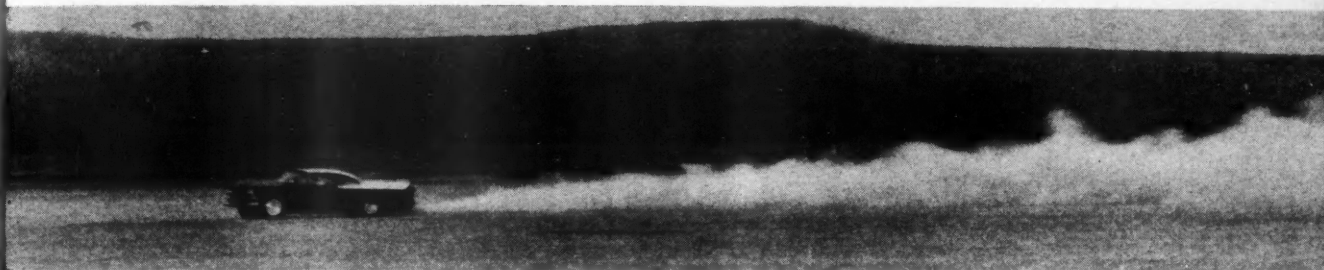
As can be expected, any new foreign design may turn out to be either smoothly simple and beautiful, or shockingly radical. No one will deny they are interesting.

WHEN THE ARMED FORCES first introduced JATO (jet assisted take off) hot rodders everywhere discussed the possibility of hanging JATO bottles on their cars and blasting off like guided missiles.

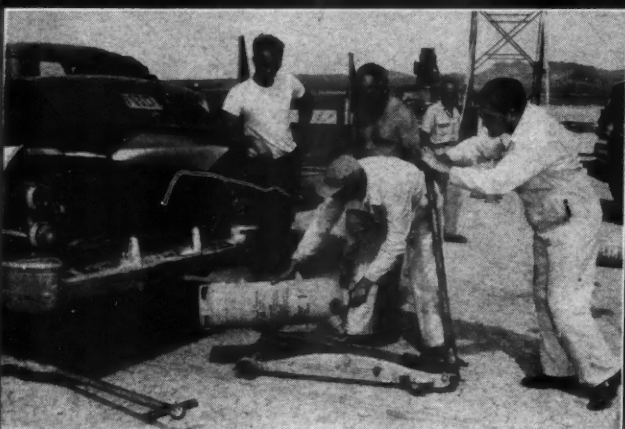
Recently Dodge Division of Chrysler Corporation was able to do just this. The Royal Lancer shown on this page was equipped with a JATO bottle and sent screaming across California's El Mirage Dry Lake as part of a TV commercial demonstrating Dodge's total contact brakes.

JATO APERY

**POLICE WOULD PROBABLY OBJECT TO YOUR USING
THIS STUNT METHOD OF SOUPING-UP YOUR CAR.**



CUTTING IN the JATO bottle after a rolling start, the Royal Lancer hit over 140 mph.



JATO bottle was securely mounted in specially constructed bracket which replaced stock tank.

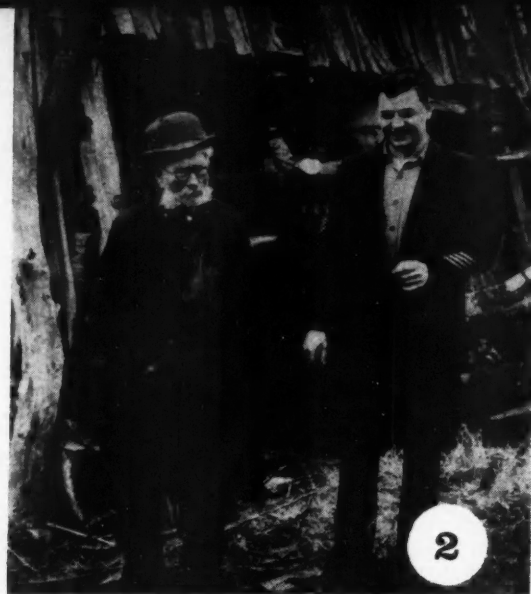
THIS TYPE of JATO bottle delivers 1000 pounds of thrust for 14 seconds. We don't advise switching it on halfway up the driveway or in the garage.

SMOKE, dust, noise, and plenty of open space for safety was the order of the day. Serious object of test was to demonstrate brakes at high speed.





IN THIS weather-beaten ruin, the prize had lain dormant for three decades. What held the edifice together defies explanation. All hands hoped its contents would be found in better condition.



TRIPP negotiates with hermit, R. L. Lang. Although a lieutenant, Tripp chose the cast-off jacket of a chief gunner's mate for the occasion. The recluse displayed what the well-dressed hermit wears.

MUCH pulling and pushing finally uprooted the car and overcame its reluctance to leave what had almost become its mausoleum.

**You don't hardly
find them like
that no more**



The HERMIT and the STANLEY

a photo story by Smith Hempstone Oliver

THE ANTIQUE automobile hunter's dream came true for Charles E. Tripp of Akron, Ohio, while he was serving as a naval officer stationed at Washington in 1944. In a roundabout way, he heard of a hermit, living out in the country about 10 miles west of Annapolis, Md., who reputedly had a very rare

Stanley Steamer. Supposedly the hermit would sell, but only if paid in silver dollars. Armed with a bag of 50 cartwheels, Tripp, supported by a group of friends and helpers, started on the treasure hunt, and in due time came upon an amazing scene. The accompanying photos record this almost incredible saga.



THE FORMER home of chickens, squirrels, and small field rodents starts its return to a more dignified status. Transaction completed, the bag containing 35 of the silver dollars reposes in the hermit's overcoat pocket.

IDENTIFIED as a 1906 model EX, 10-horsepower runabout, the Stanley, although badly weathered, is amazingly intact. Headlamps and horn are missing but perhaps never were fitted.

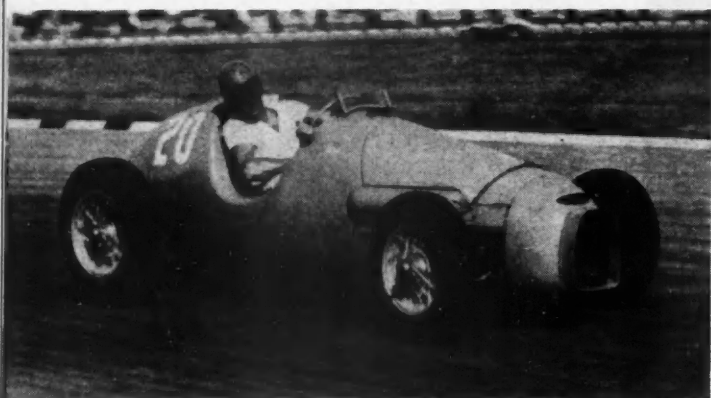


LOADED and ready to go, the Stanley wound up as the property of the Thompson Products Auto Album in Cleveland, where it will be restored and placed on exhibit.



BY MEANS of block and tackle, and guided by loving and interested hands, the antique is loaded aboard a truck. The right front tire seems a little the worse for wear but the upholstery is in good condition.

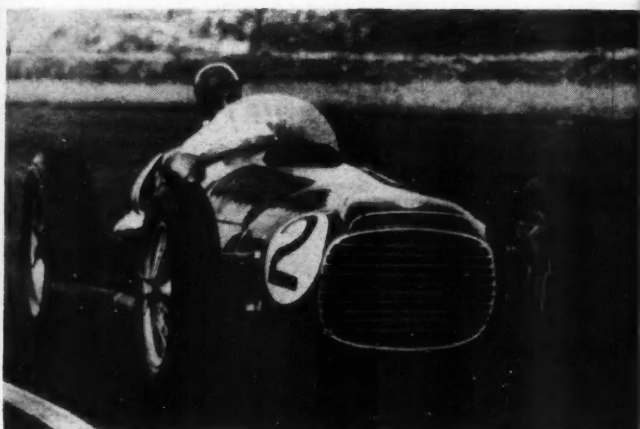




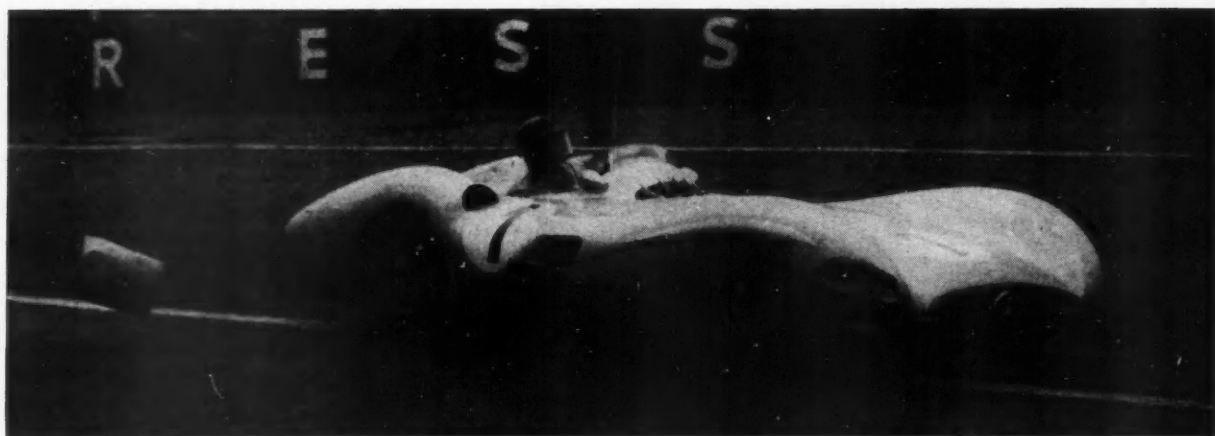
LIGHT, fragile Gordinis were quite fast and handled well on tight circuits, but due to lack of finance they were never formidable in Grand Prix racing. Perhaps biggest success was win at Rheims in 1952.



WITH THIS MASERATI, the prototype 2500cc, Type 250-F, Fangio won the Argentine Grand Prix in 1954. This was the first Maserati to use a de Dion rear axle.



ORIGINAL version of BRM 16-cylinder, supercharged model developed almost 600 bhp from 91 cubic inches.



FANGIO clips a course marker in streamlined 1954 Mercedes-Benz. Car had many features which are now incorporated in present sports cars. Straight eight 2500cc engine had fuel injection, desmodromic valve gear, and developed over 280 bhp. Chassis features were space frame, all-independent suspension.



PHOTOS BY RONALD HANSEN

YEARS OF GRAND PRIX RACING

by Ronald Hansen

YESTERDAY'S INFLUENCE ON A GREAT SPORT TODAY

GRAND PRIX (say it "graan pree") or grand prize racing, as defined and conducted in other countries, is unfortunately non-existent in the U.S. today. This highly competitive sport with its interesting combinations of men, machines, and courses has been productive of a public interest in racing which is not matched here. Perhaps more important, it has provided foreign manufacturers with an area for research and development which far exceeds any source of practical design information we may obtain by racing stereotyped, single-purpose cars on oval speedways. Our closest approach to Grand Prix racing is the sports-car events which have become increasingly popular.

COURSES OR CIRCUITS are road courses which are intended to test all functions of a car. Unlike U.S. tracks, where all turns are in one direction, the G.P. circuit has a variety of two-direction corners of varying degrees of sharpness. Road surfaces may be neither uniform nor smooth; there are both up and down grades. In one instance the course is laid out entirely on city streets. Lap distances are usually five or six miles and the total length of races is approximately 300 miles.

Cars participating in Grand Prix races are strictly racing machines, as are our track cars. They are limited in engine size to a formula, for competitive reasons. Doors, spare tires, lights, and other equip-

ment required to qualify for sports-car racing are not used. The cars are fabulously light and agile—top speeds approach 200 mph. The big contrast in their relation to American track cars lies in the fact that they are designed to meet the widely varying course conditions which simulate most of the things any automobile may be required to do. What follows is a technical history of this interesting sport in the postwar period.

Before getting on to the subject of technicalities in postwar Grand Prix racing, it is just as well to point out that the first phase of that racing was largely a matter of what could be done rather than what should be done at the end of World War II. Generally the FIA (Fédération Internationale de l'Automobile, Paris), which fixes the rules that govern Grand Prix racing, dreams up a new formula while the current one has two or three years yet to run. This allows race-car builders that much time in which to study, design, build a new car, and have it ready when the new formula becomes operative. But in 1946 the FIA was faced with the fact that there hadn't been any racing for seven years, and if they were to work out an entirely new formula there wouldn't be any for at least two years more.

SO THEY HAD TO MAKE OUT with what they had in hand. Mainly this was a number of supercharged 1500cc (91-cubic-

inch) racers and a few unsupercharged 4500cc (273-cubic-inch) cars which formed about half of the cars in the "three-liter blown, 4.5-liter unblown" formula of 1938-40. Pre-war experience had indicated that the supercharged three-liter cars were much too fast for the 4.5s, so a reasonable compromise was worked out and the formula became up to 1500 supercharged and 4500 unsupercharged. This assured the immediate availability for racing of several four- and six-cylinder Maseratis, a strong team of eight-cylinder Alfa-Romeos, a number of six-cylinder ERAs, and one or two four-cylinder Alfas among the 1500s. Several four-liter, six-cylinder Talbots and one V-12 Delahaye were available in the unblown car field. Without a doubt, it was the best compromise that could be made at the time.

THE ALFA-ROMEOS were definitely the fastest of these cars. They were powered by an eight-cylinder, in-line engine of 58 x 70 mm bore and stroke, and had twin overhead camshafts to 90-degree valves. Developed originally in 1937, they had first appeared in the following year and been successful almost straight away, although they were badly beaten in 1939 by the sensational Type W-165 Mercedes-Benz V8. However, the Mercedes cars, which could have been the fastest of 1946, were tied up in Switzerland with legal

continued on next page



BRITISH VANWALL uses four-cylinder engine with fuel injection which develops 295 bhp. Car is expected to do well in 1957.

GRAND PRIX

continued

bothers, and shattered Daimler-Benz was in no condition to think about motor racing at that time. The Alfas originally developed 190 bhp at 6500 rpm. However, when they appeared for the first important postwar race, the Grand Prix des Nations, in July 1946 at Geneva, they had been fitted with two-stage supercharging and bhp was now 254 at 7500 rpm. Two-stage blowing had been originally developed by Auto-Union and Mercedes-Benz in 1939, when they were forced to resort to higher blower pressures in their race against each other for more power.

THE STORY OF SUPERCHARGING in a nutshell is this: the function of a supercharger or blower is to pump lots and lots of combustible mixture into the engine. To do this they have to compress it like an air compressor does, and when they put the squeeze on it, the fuel/air mixture heats up, like air in a bicycle pump when you use it on a tire. The more it heats up,

the more it expands, so after a while you're just running in a squirrel cage, because when it expands you've got to squeeze it all over again to get it into the engine, in the unbelievably short fraction of time an inlet valve stays open at 7500 rpm. Besides, racing fuel is highly explosive stuff, and you don't want your engine to blow up into little bits! However, if you can split the compression job into two stages you can slow down the temperature rise, which is a function of the time taken to achieve a certain compression. For example, if you stroke a bike pump slowly it won't heat up so much. Besides, between one blower and the other you can fit an inter-cooler (or gilled conduit) and further cool the charge. That means that you can raise safe operating pressure without having the supercharger come apart in your face.

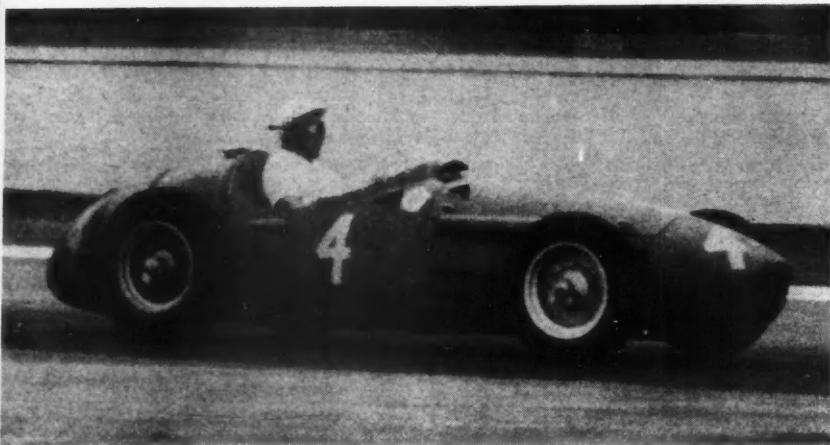
With this layout Alfas were supreme in those early years, and in 1947 they raised bhp to 265 at 7500 rpm. Maseratis, with their comparatively modest four-cylinder engine, tried hard to catch up. They never quite made it, although at times they weren't far behind. In 1947 they, too,

dreamed up a two-stage layout to save heat and power, and got about 240 net bhp from their engine, but even at that they were 25 or 30 behind the Alfas. Besides, their simpler engines were much more highly stressed to achieve this figure and broke down rather frequently. Maseratis had been designed for use by private owners with limited field servicing facilities, and incorporated such design features as detachable cylinder heads. These were looked on with disfavor because the gasket joint allowed a heat path break between the blazing hot combustion chamber and the (comparatively!) cool block. Just a detail, of course, but these details go to win races.

MEANWHILE THE LONE DELAHAYE, actually the most advanced 4.5-liter car of 1946-7, only appeared once or twice and was disappointingly slow. Talbots raced with great enthusiasm and in 1947 they increased engine capacity to a full 4500cc, to take advantage of the formula limit. The Talbot engine had been designed for sports-car racing in 1935 and incorporated six long-stroke (93 x 110 mm) cylinders with overhead valves operated by push-rods and inverted rockers, rather like the ERA cars. Thus Talbots never got any great power output from their engines, but the cars were reliable and the fuel consumption was relatively low—and thereby hangs a tale which will come later. The ERAs were by this time completely outclassed; these cars were probably already obsolete when they were designed, although they did gain a lot of initial success because in 1934 the British knew more about highly supercharged small engines than anybody else. This knowledge gave them an initial start, but they were soon overtaken by Maserati and Alfa-Romeo who used more up-to-date layouts.

While all this was going on several projects sprung up here and there, including the ill-fated CTA-Arsenal V8, sponsored by the French government as a French "National Racing Car." This design ran into a lot of detail trouble, never went properly, and in the end the sponsors got fed up and withdrew their support. Another promising 1500cc car was the V-12 Ferrari, designed by Italian Engineer Colombo for Enzo Ferrari. The Ferrari was the first true postwar design and was an interesting indication of the way things were pointing. It had 12 cylinders of 55 x 52.5 mm bore and stroke, and these figures were significant. The point was this: designers were now fully appreciating the need to obtain greater piston area, i.e., area of piston crown. In order to increase crown area with a given number of cylinders and still stay within a displacement limit, it was necessary to shorten stroke, but stroke couldn't be shortened too much, either. Another necessity was to keep rpms high; all other things being equal, the more revs you get, the more

continued on page 60



CURRENT MASERATI is a very highly perfected racing car which on a basis of early season events seems headed for top honors.

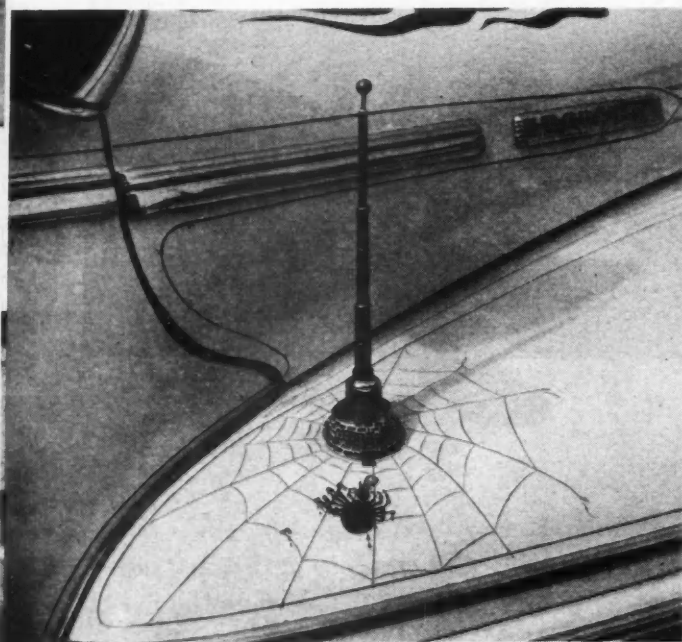
Custom CARS illustrated



WHEN THE CUSTOMIZING ENTHUSIASTS turn to the paint brush to obtain individuality in their cars, conceivably you could regard this trend as a decline in the metal-bending art that has made restyling automobiles such a big hobby from coast to coast. Happily, however, this striping and flame-painting fad is only another form of expression of the nonconformist, as you'll see in this eight-page section this month and in the issues of Motor Trend to follow. Ada Joan Hume, 19, hand-models for Dean Jeffries, one of the better-known "professional" strippers.



STRIPING IS USED effectively around chrome trim to give it more definition, adding more life to the rear fender and other areas of the auto.



QUITE ORIGINAL is this spider web with a little red brick house at the bottom of the antenna. Troubled spider is approaching "welcome" mat.

Custom CARS illustrated

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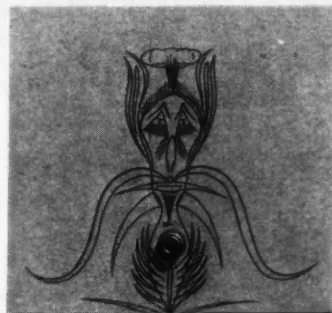
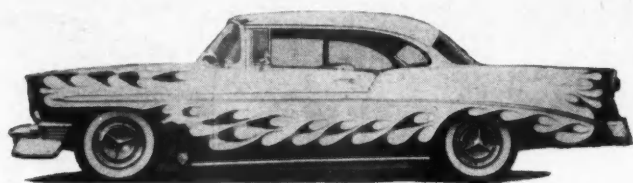
The Latest C STRIPING and P

TODAY there is an ever-increasing market for anyone with a paint brush and a fair amount of artistic skill in the field of customizing. Car owners have suddenly discovered that pin striping and figure painting is a truly economical way to create individuality in their automobiles. From Maine to California, the craze has spread nearly as rapidly as the popularity of an Elvis Presley or Pat Boone record. Many professionals are already in this new occupation of pin striping. Such strippers as Jeffries, Von Dutch, Tommy the Greek, Art Summers, Watson, Roth, Katayanagi, Johnson, Heinrich, Varner, Domit, and Hoegsberg are best known for their work in various parts of the country. Of course, now that the fad has caught on, there will be others to add to this list. Besides, there's a patented "Pin Stripes" kit now available at many auto accessory stores that makes it possible for you to do your own striping. These typical examples might make an enthusiast out of you, too.

PHOTOS BY GEORGE BARRIS



INTRICATE DESIGNS enhance an otherwise plain rear deck. Two-toning of certain areas tends to give striping a three-dimensional effect.



Best Customizing Fad and FIGURES in OILS

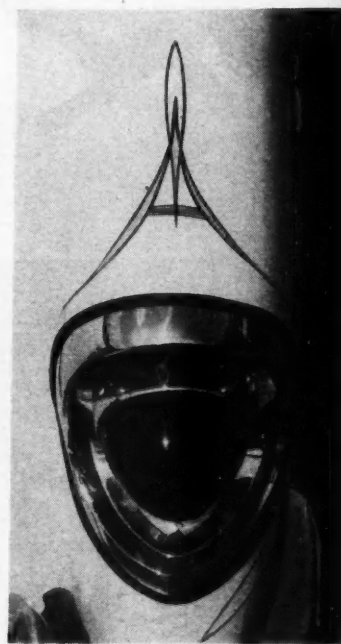
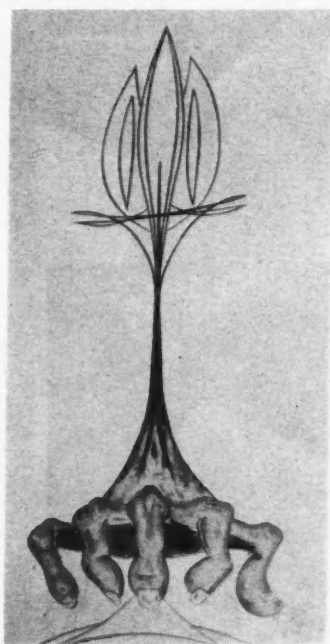
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NEW IN THE STRIPING FIELD is "Pin Stripes," a patented decal created by Don Fell, former art editor for **MOTOR TREND**. It's available in red and white and easily applied to any area of the car in a matter of minutes, as shown. Moreover, these pin stripes (single sheet \$4.95) will not chip, peel, or fade.



AN EXAMPLE of the "endless line" is shown on this Chevy dash panel. It may give impression of confusion, but it expresses owner's individuality.



THE DISTORTED HAND created in oil over a headlight was painted by Jeffries. Two-toned black-and-one-color design is effective on white fender.

Custom CARS Illustrated

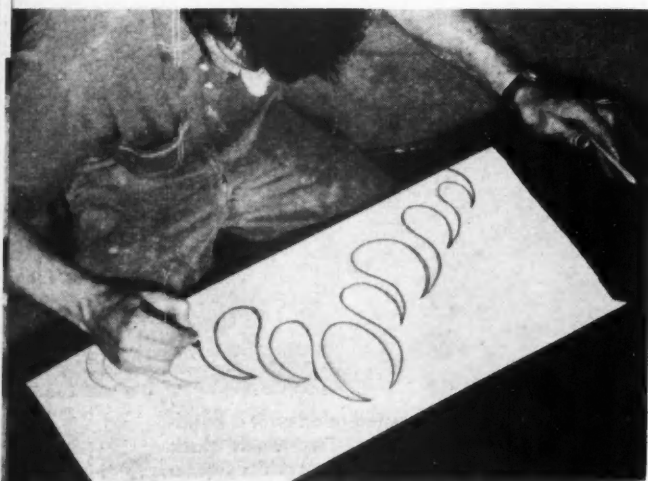
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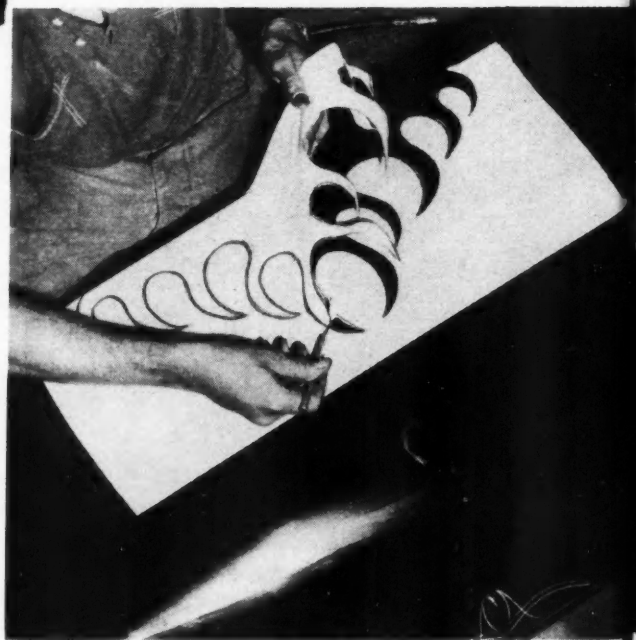
Flame

FLAME PAINTING, while not as prevalent as striping on cars from coast to coast, does have a growing following. The one-color silhouette flames that appeared at the beginning of the craze now are giving way to the four-color variety. These are blended and hand-rubbed, tipped with gold and finished off with contrasting striping. Although the application of blended flames appears to be complex, the procedure is simple enough so that any painter with care can accomplish the job by following the photo steps below. There are two methods of painting flames: You can use 1/4-inch masking tape to outline the flames, filling in between the peaks with paper, but this method is far more time-consuming than the one described here, where sheets of masking paper are used. This paper can be obtained in rolls from sign painting and poster supply stores. After the paper is securely applied to the area desired, you then scribe off the flame pattern. Color blending is accomplished by working with a wet painted surface and by cutting the air pressure down when spraying the paint. The basic color coat is applied first; then the blending colors are mixed and applied, each blended into the previous color coats before they have a chance to dry thoroughly. That's about it; you can take it from there.

PHOTOS BY GEORGE BARRIS



1. STRETCH masking paper out on area to be painted. Use rubber squeegee to work out air bubbles. Make flame design with pencil.

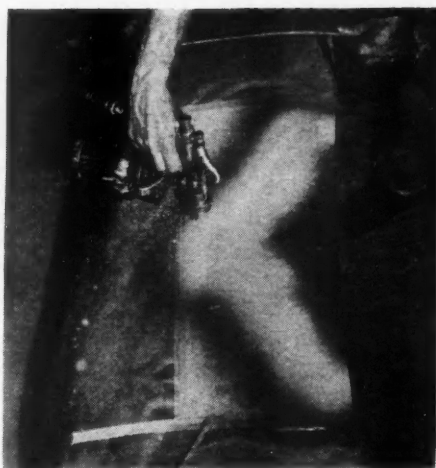


2. CUT along edges of marked design with razor blade or paper knife. Pull lightly so as not to remove any more paper than desired.

PAINTING—How It's Done



3. USING No. 400 wet sandpaper and fine steel wool, smooth area to be repainted.



4. APPLY thick coat of basic color (usually red). Drop pressure and apply second color.



5. AFTER paint is thoroughly dry, pull tape slowly away from edges of curled flame.



6. NOW take No. 600 wet sandpaper and, using palm of your hand, lightly smooth ridges of flame; then use rubbing compound.



7. AFTER the curled flames are dry, a stripping brush is used to give a contrasting white color to the basic flame.

Custom CARS illustrated

continued



PHOTOS BY JAMES E. POTTER



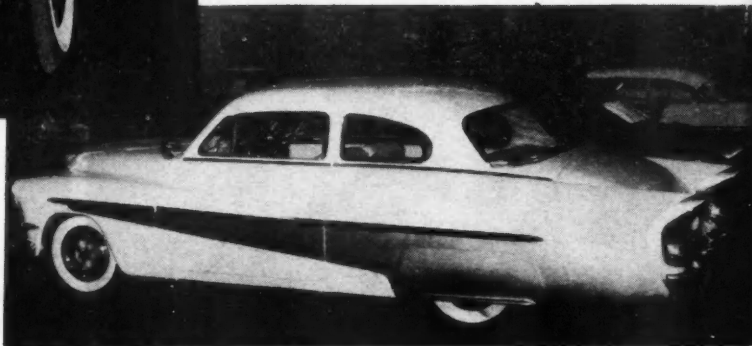
RESTYLING THUNDERBIRDS now is getting into full swing. Owner Aaron M. Ginsburg of Oakland, Calif., designed these changes; Bill Prettyman and Al Fedke executed the bodywork. Sheet steel was used to form the dual headlight shroud and the sharp-finned rear fender extensions. Tail lights are from a '55 Pontiac, while the back-up and directional signal lights are Dodge. Olds Fiesta hubcaps, a special tonneau cover, and hand-formed side molding help to make this an outstanding nugget-gold T-Bird.

The NEWEST CUSTOMS



THE REAR END of Richard Bartoni's '51 Mercury two-door resembles '56 Packard with its large tail lights and extended rear fenders. Chromed mesh grille is distinctive behind an unusual bumper bar arrangement.

SHADED HEADLIGHTS, four-inch lowering, white and gold two-toning, and an interior in black-and-white rolls make this car from Oakland an eye-catcher.

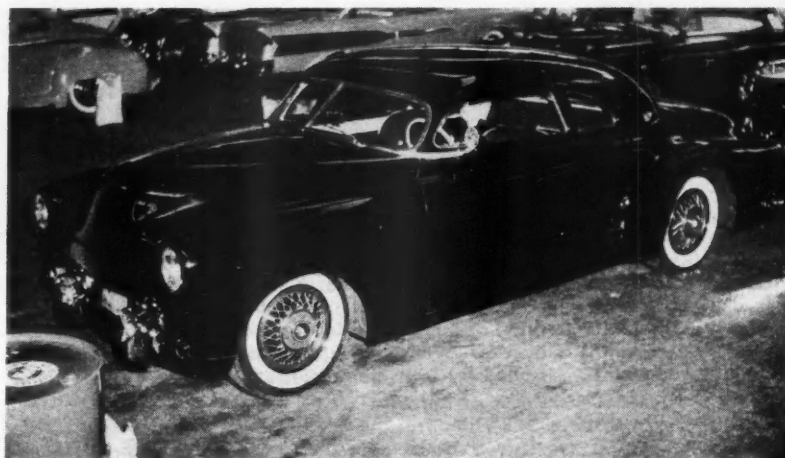




QUALITY WORKMANSHIP in customizing is exemplified in Don Chaves' '53 Mercury from Hayward, Calif. The grille opening is extended forward and shows considerable contouring. Front bumper is removed; license plate and parking lights are inset, as are the headlights,



which are emphasized by a dark-painted rim and offset by contrasting white striping. The hood air scoop and '55 Lincoln tail lights are painted in the same manner. Doors and rear deck are electrically operated. Pleated and rolled upholstery gives interior plush look.

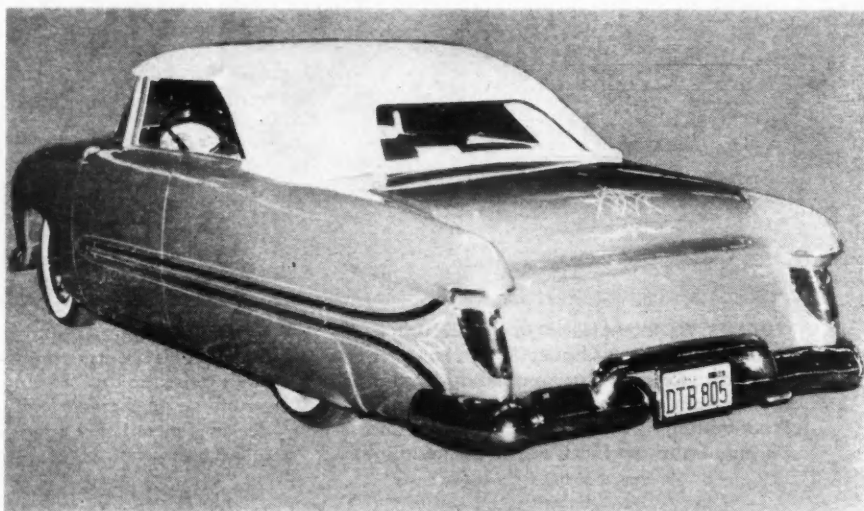


LA LANCIA is the name given Edward Russell's '52 Mercury hardtop (above, left) from San Francisco. Outstanding are its sharp-finned rear fenders with '55 Packard tail lights, and the horizontal rear-deck metalwork. **THE CONTINENTALIZED** deck on the T-Bird (above, right) shows unusual creative ability executed in metal.

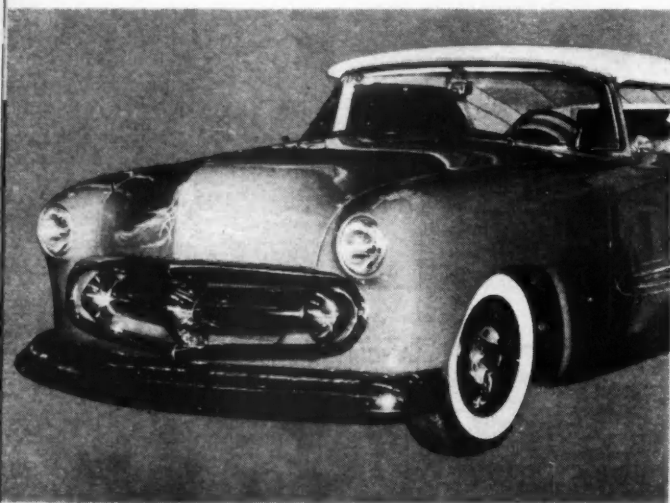
"THE BLACK PANTHER" (left) is a chopped and lowered '50 Chevrolet coupe owned by Salvadore La Rue of Daly City, Calif. All external hardware is removed; front and rear bumpers and grille trim are hand made. Air scoops are functional.

Custom CARS Illustrated

CUSTOM of the MONTH



PETE MILLINO of Walnut Creek, Calif., is the proud owner of the fully restyled '50 Ford convertible, deservedly given MT's "Custom of the Month" title. It features a modified Ford truck grille, frenched headlights and a carefully installed, full wrap-around windshield. Car is painted a '57 Lincoln Huntsman Red and is striped.



TO GIVE CAR broader appearance, a '55 Ford rear deck lid has been chopped and fitted between rear fenders that have been lengthened seven inches; '55 Lincoln tail lights are reversed and inset below the extended, straight, swept-back rear fenders, giving rear end with its high-crowned rear deck and contoured shelf a completely different look. The interior has been com-



pletely revamped, too. A padded '56 Ford dash panel is installed along with custom upholstery, rugs, and kick panels. Top has about a six-inch overlap over windshield. Doors are radio-controlled by transmitter carried in owner's pocket.

the most - often - asked QUESTIONS ABOUT

Classics

by Robert J. Gottlieb, Classic Car Editor

FOR EVERY ODD INQUIRY THERE ARE A DOZEN OF BROADER INTEREST.

EACH OF THE THOUSANDS OF LETTERS received by us in the past five years tells a story of its own. One can read loss, gain, love, hatred, joy and heartbreak into many of them. Some unfold tales that would make good material for a TV program, like that of the chap who paid \$2500 for an alleged Chrysler LeBaron that turned out to be a standard factory-built model. Or consider the spinster who sold her brother's vintage Mercedes for \$25 because the purchaser convinced her that spark plugs could no longer be obtained.



PHOTO BY LESTER NEWMAN

UNUSUAL foreign classic is this Isotta Fraschini phaeton with a Casthens body. You may have seen this one in the movies. Very wide door served both front and rear seats.

ON THE OTHER SIDE OF THE LEDGER, many couples have met and married as a result of interest in an old car. Hundreds of others have found lasting friendship and companionship with a classic as intermediary. For sure, each tells a story.

Most letters are repetitious, standard, and in the same vein. It is these that we are concerned with this month because they comprise the most frequently asked questions. By far, the most numerous are those seeking classification or financial appraisal. They generally start the same way—"Is a Moon a classic or special-interest car, and what would be the restored value of a coupe?"

It isn't difficult to classify 98 per cent of the cars, but establishing a financial value without ever seeing the car is something we refuse to do. Far too many factors are involved, and we strongly suspect that a written opinion could result in a sale of a car at an inflated price. By way of example—we suppose any 1930 Pierce-Arrow in running condition would be worth \$250. How about a Pierce-Arrow with a latent defect such as a cracked block or cracked differential assembly?

Next in number are requests for information leading to the purchase of complete cars or parts. The best bets for both are club periodicals and the classified ads in the Sunday editions of the larger newspapers. We frequently recommend Atlantic Auto and Truck Wrecking, 19020 So. Figueroa St., Gardena, Calif., for parts because we know from personal experience that they

are reliable. There are undoubtedly many other legitimate business concerns handling classics and parts, but they haven't been called to our attention.

We have received hundreds of letters asking for addresses of clubs and frequently are at a loss to send a reply. The reason is that most clubs change officers and addresses yearly, but fail to notify us of the changes. Most enthusiasts ask for the address of the Lincoln Continental Owners' Club and the Horseless Carriage Club. The LCOC is located at 245 State St., Boston 9. As

for the HCC it is questionable whether the owner of a classic will obtain any benefit from membership. The national group restricts most tours to cars built before 1915, while a majority of the regional groups require proof of ownership of a pre-1915 car as a prerequisite to membership. The owner of a classic is unwelcome at most events unless he attends without his car. Many fans are more specific and ask whether they should join a particular club. If you own a Packard you will receive little benefit from membership in a specialty club such as Auburn-Cord-Duesenberg. Conversely, if you own a Cord there is little reason to join the Packard Automobile Classics.

Many letters bring forth hearty chuckles. As an example: "Dear Sir: I own a 1930 Packard Eight. Please tell me how many were built, original cost, original paint schemes, and a list of all specifications for chassis and engine. I would also like to have you send me a brief history of the factory and owner's, as well as service manuals. If there is a nominal fee for this information, please send it C.O.D."

WE NEVER CHARGE FOR INFORMATION and, of course, there is no fee. On the other hand, we don't write articles for individuals, so it is impossible to answer letters of this sort. Please be reasonable in your requests, and always send a stamped, self-addressed envelope. Remember that sometimes the mail is so heavy that we could spend all day just reading it, without finding any time for answering. You'll make our work much easier and your chances of receiving a timely reply much greater if you will state the question and leave boxes to be checked for the answers. As an example:

Is this car classic? Yes..... No.....
Was red an original color? Yes..... No.....
Is the engine L-head? Yes..... No.....

WE ARE REALLY ON THE SPOT with those letters asking whether it is better to purchase a two-passenger Mercedes or a five-passenger Bentley. Naturally, every one wants to make the best possible buy but seating arrangements, convertibility, and make and model are always best determined by an appraisal of what an individual wants in a car. It isn't difficult to answer whether Car A at a certain price is better than Car B at a certain price, but it is a lengthy job to discuss make and model. Put yourself in our spot and try to come up with an intelligent answer in 25 words or less to the question whether a town car is more desirable than a limousine.

Not all letters are loaded with questions. Many owners set

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forth the specifications and finer points of their cars and attempt to qualify them as classics. The dyed-in-the-wool fan would be aghast at the number of letters advocating Crosley, Bantam, Buick, Dodge, and Roosevelt as classics. Those owners simply fail to grasp what a classic is, or they have not been interested in the hobby long enough to sense the magic aura surrounding the recognized classic. We try not to insult any reader, but the best advice for anyone in doubt is to attend a meeting of classic-car enthusiasts and observe the Duesenbergs, Hissos, M-B's, Cords and K Lincolns. It is impossible to classify a Ford, a Chevrolet or a Plymouth with this manner of car. Differences are so apparent that it is useless to phrase in words the achievements of builders of well-executed classics. Of course, in many cases there is justification for the confusion in the minds of neophytes.

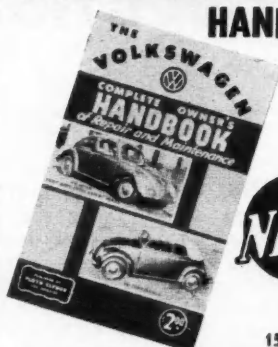
AS YOU PROBABLY SUSPECT, a great number of letters concern permissible modifications. We are inclined to be lenient where substitution means that a car will remain on the road. As an example, if it is necessary to keep a car running by substituting a coil and distributor for a magneto (or vice versa) by all means make use of the substitute parts. But heavens to Betsy, when you have a good-running engine in a Duesenberg, why replace it with a Buick engine? If you want a Buick, buy one in the first place and don't mess up a fine machine for the next fellow. So many readers seek various modifications to increase acceleration or better gasoline mileage or horsepower. When completed, the hoped-for gains are generally small, but the overall decrease in classic-car value is great.

Along these lines it is surprising how many fans want to know if they can get better mileage with, say, a 1937 Packard by installing a late-model Packard engine with automatic transmission. We certainly do not advocate installation of late-model engines in old cars, but the general rule is that there will be no increase in mileage unless rear-end gears are also changed. You will probably have faster acceleration and higher top speed, but you will no longer have a 1937 Packard.

MANY PEOPLE WONDER whether they should purchase a particular car and hold it for posterity. Will it be worth more money at a future date? The answer is "yes" for recognized classics and the better special-interest cars. Your guess is as good as ours for the ordinary cars.

A number of years ago we thoroughly discussed the advisability of purchasing cars abroad and bringing them into the States. We have received probably 500 to 600 letters a year from servicemen asking this question. The general rule is that you will not make money unless you buy a recognized classic at a very low price. I wish time permitted more material on this subject but, Oh Lord, here comes the mailman again!

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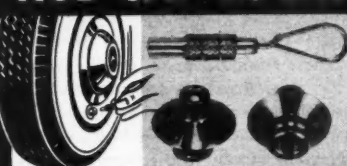
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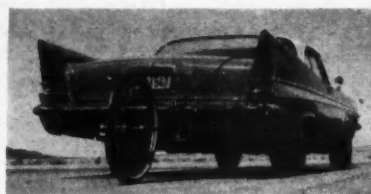
Your common sense tells you that engines and driving conditions vary so widely that no manufacturer can honestly make a positive statement that his spark plugs will increase your gas mileage by any definite percentage.

What we say is simply that Auburn Triple Electrodes will produce a noticeable and worthwhile increase in gas mileage and developed horsepower in your car. This is because aircraft-type concave triple electrode geometry makes them inherently more efficient igniters than conventional plugs. Twelve sharp edges to which the spark can jump and a full 100% additional sparking area insure more complete combustion of each gas charge to the cylinder.

In addition, you can expect Auburn Triple Electrodes with new "Alloy #524" electrode metal to have an efficient life as much as double that of other plugs. "Alloy #524" permits the use of a "hotter" plug which will reduce, if not eliminate, oil or lead fouling.

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'57 Chrysler

continued from page 23

Specifications

ENGINE: Ohv V8. Bore 4.00 in. Stroke 3.90 in. Stroke/bore ratio 0.97:1. Compression ratio 9.25:1. Displacement 392 cu. in. Advertised bhp 325 @ 4600 rpm. Bhp per cu. in. 0.83. Piston travel @ max. bhp 2990 ft. per min. Max. bmepl 165.4 psi. Max. torque 430 lbs.-ft. @ 2800 rpm.

TRANSMISSION: Automatic transmission is TorqueFlite, torque converter with gears (3 speed); ratios: 2.45:1, 1.45:1, 1.00:1.

REAR-AXLE RATIOS: Automatic 3.18, optional 2.92. **STEERING:** Turning diameter 45.3 ft. Turns lock to lock 3.75. Overall ratio 19.8:1. Type: power, rack and gear sector and recirculating ball nut.

WEIGHT: Test car with gas, oil and water, 4560 lbs. (54% front, 46% rear). Test car weight/bhp ratio 14:1.

DIMENSIONS: Wheelbase 126 in., overall length 219.2 in., overall height 57.2 in., overall width 78.8 in., front tread 61.2 in., rear tread 60.0 in., rear overhang 59.2 in.

Tires 9.00x14 tubeless.

PRICES (including suggested retail price at main factory, federal tax, and delivery and handling charges, but not freight): WINDSOR four-door sedan \$3088, two-door hardtop \$3153, four-door hardtop \$3217, four-door two-seat station wagon \$3575. SARATOGA four-door sedan \$3718, two-door hardtop \$3754, four-door hardtop \$3832. NEW YORKER four-door sedan \$4173, two-door hardtop \$4202, four-door hardtop \$4259, convertible \$4638, four-door two-seat station wagon \$4746. 300-C two-door hardtop \$4929, convertible \$5359. (TorqueFlite and power steering standard on Saratoga and New Yorker. TorqueFlite and power brakes standard on 300-C.)

ACCESSORIES: TorqueFlite (Windsor only) \$220, power steering \$108, power brakes \$40, power seats \$97, power windows \$108, radios \$100 and \$124, heater and defroster \$86 and \$158, air conditioning \$506, tinted glass \$35, dual headlights \$33.



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IT'S TRUE! Now—without spending one single penny—you can start giving the very same car you are driving today up to **7 MORE GAS MILES PER GALLON... UP TO 6,000 MILES WITHOUT AN OIL-CHANGE... UP TO 100,000 MILES WITHOUT A SINGLE MAJOR REPAIR!**

Yes—without buying one single complicated gadget—you can give your present car jackrabbit starts... blazing new power for those superhighways... smooth dependable power for stop-and-go driving... effortless cruising power for those pleasant jaunts!

Now, thanks to a modern miracle of automotive science—you can actually drive completely around the world twice—yes, up to 60,000 miles—with one set of sparkplugs... drive up to 7 years without needing a ring-and-valve job... you can triple the life of your filters—yes, every vital part of your engine—your pistons... bearings... cylinders... can last years longer than you ever dreamed possible—the body of your car may actually wear out years ahead of your engine! Yes, without touching one single tool, you can actually save up to \$200, \$300 a year on gas, oil and engine repairs—and get those savings... get that thrilling new power and performance—for the full complete lifetime of the very same car you are driving today!

Sound impossible? Well, **FACTS... THE SCIENTIFIC DOCUMENTED FACTS, SPEAK LOUDER THAN ANY WORDS!**

The Most Thrilling Driving Results Ever Achieved!

A 1940 Ford V-8 driven by Mr. Win Johns of Middlesex, N. J. was given every normal engine-wearing, fuel-eating test imaginable! Fender-to-fender driving in thick city traffic... roaring along wide open superhighways... repeated sudden spurts on the gas pedal... starting her up in below-zero weather! Yet believe it or not, after 169,000 miles of every typical engine-wearing challenge experienced by car-owners—that 1940 Ford is still running like a charm... the sparkplugs have given full, hot, firing power 5½ times longer than similar plugs in other cars... the pistons, valves, cylinders and rings are still incredibly clean and performing like a charm—its engine has never had a single major repair—and automotive experts are astounded by the fantastic power and life of that engine! More proof? The Farmers and Consumers milk delivery fleet of Morristown, N. J. attached this fabulous automotive device on 11 of their engine-wearing, door-to-door, stop-and-go delivery trucks. Results? The engines on those 11 trucks actually outlasted the ordinary trucks by 5½ times... never needed one single major repair!

You'll read many more thrilling case-records just like these elsewhere on this report! But right now you're going to discover how YOU can stop spending dollar after dollar on wasted gas, oil... on parts that break down—and

do it without spending one single penny to prove it!

Why You Waste Dollar After Dollar on Gas, Oil, Repairs!

Do you know what causes the filth on your sparkplugs... what causes them to foul and set you up for a \$10 bill for new plugs? Do you know what causes the sludge and dirt to form on your pistons—that sets you up for a \$15 cleaning job? Do you know what causes the corrosion and holes in your valves—that sets you up for a \$20 repair job?

Friends, the deadliest thief under the hood of your car... the thief that is robbing your engine of its normal life... the thief that is actually lifting dollar after dollar out of your pocket... is **POISONOUS ACID!** Yes, deadly engine-destroying acid! How does this poisonous engine-wrecking acid get into your car? Hold your breath, friends—the answer is: **YOU PUT IT THERE—EVERY TIME YOU START UP YOUR CAR!** That's right! It's a **PROVEN SCIENTIFIC FACT** that the gasoline you buy, any gasoline, has sulphur in it—forming one of the deadliest metal-eaters known to science! And every time you put your foot on your gas pedal—that gasoline starts manufacturing deadly sulphuric acid right inside your engine! Yes, enough sulphur is in a tankful of gas to completely dissolve a 3-inch nail of solid iron! Yes, and this is exactly how that acid eventually does inside your engine... this is exactly how that acid begins to eat away at the metal parts of your engine... how it chews away at your valves, pistons and cylinders—and then drops those chewed-up particles of steel and iron into your oil line where it thickens the filth and grime that chokes and clogs every breathing, moving part of your engine!

Yes, this dirt and grit seeps through your filter and circulates with your oil! This is the filth that helps foul your sparkplugs and scars your cylinder walls! This is the filth, hard grime that coats your pistons, clogs your oil lines, wears grooves into your bearings! Yes, these are the sludges and gums that choke your valves... that prevent your engine from breathing and rob it of its real power... that gnaw away at the joints and bearings of your engine... that set you up for \$100... \$200... \$300 repair bills!

At Last! Science Gives Your Engine New Pep, Power—Years More Life!

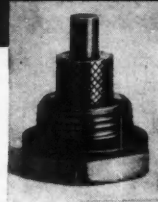
And this was the problem that engineers wrestled with for years before one dedicated man of science stumbled across the answer to this acid problem! Working on an aircraft research project—this scientist discovered that certain

YES! This thrilling new automotive miracle actually gives your present car up to 100,000 miles of blazing new power without a single major repair! Up to 7 more gas miles per gallon! Up to 6,000 miles without an oil-change! Impossible? Test it yourself—without spending one single penny! The dramatic documented facts are on this page!

metallic elements actually have the ability to **DESTROY ACIDS** through chemical action! Immediately this scientist knew he had the answer to the most vexing automotive problem of our time! By refining and processing and fusing these acid-killing metallic elements into a special magnesium aluminum core—and then adding a powerful permanent Alnico magnet to the tip of it to pick up the pieces of metal that contaminate your oil—this remarkable scientist had invented one of the greatest power-saving, money-saving automotive miracles known to man! Small enough to hide in the palm of your hand—it was simply and quickly attached to the oil drain plug of one car after another—in one test after another—and the results were almost too thrilling to believe! The Canadian Government tested a similar principle on their own cars—saw those test-cars run 17,000 and 20,000 miles without ever needing an oil-change—and that was proof enough! Yes, the Canadian Government actually approved and licensed that amazing new development!

If you could visit one of the most creative automotive laboratories in America, you could see just how fantastically effective and powerful this scientific acid killer actually is! In front of your very own eyes, engineers would take this tiny miracle of science—drop it into a beaker full of engine-eating acid—and in a matter of seconds you would see for yourself how that deadly acid begins bubbling and foaming... how all the punch and poison being knocked right out of that acid and being rendered harmless!

Just imagine this simple proof being duplicated inside your car—on every vital part of your engine! **JUST IMAGINE THIS THRILLING NEW ACID KILLER KEEPING YOUR OIL CLEANER AND PURER FOR UP TO 6,000 MILES WITHOUT A CHANGE... just imagine it keeping the same set of sparkplugs free of filth for five years... your rings and pistons for 7 years... yes, just imagine this amazing new ACID KILLER keeping your valves free of choking carbon and grime—letting your engine breathe freely and cleanly with the full throbbing horsepower it's really capable of! Yes, friends, it is any wonder that this thrilling new scientific development can give your engine up to 100,000 MILES WITHOUT A SINGLE MAJOR REPAIR—that it can actually start saving you up to \$300 a year on gas, oil and costly repairs—with the very same car you are driving today—without**



your spending one single penny to prove it!

Don't Spend a Penny! Test It Absolutely Free for 30 Full Days!

That's right! You send no money for your **MAGNA POWER DRAIN PLUG**—all you do is simply try it for one full month—entirely at our risk! What's more, any gas-station attendant will quickly attach **MAGNA POWER** to your crankcase entirely without charge! Then you drive off and for the next 30 days give **MAGNA POWER** the toughest tests you can think of! Test it in stop-and-go driving... against other cars pulling away at the lights... up steep hills... on the open highway! If after one full month you're not absolutely convinced that **MAGNA POWER** is giving your engine blazing new power... jackrabbit starts and split-second takeoffs—you simply return **MAGNA POWER**—you didn't spend a penny for it to begin with! But if 30 days of test driving has absolutely convinced you that **MAGNA POWER** can add years to every vital part in your engine—that it actually can save you up to \$300 a year on gas, oil and costly repairs—then and only then do you simply send us the amazingly low price of \$4.98—and **MAGNA POWER** is yours to keep! You have nothing to risk... nothing to lose! And you have year after year of thrilling new power driving to gain! So **ACT NOW!**

— YOURS FREE FOR 30 DAYS! —

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Yes, I want you to send me **ABSOLUTELY FREE** your thrilling new **MAGNA POWER** Drain Plug! I understand that I don't even pay the postage one penny when **MAGNA POWER** is delivered—that I simply try it on my present car for 30 full days entirely at your risk! If at the end of one full month I am not convinced that it can help give my present car up to **7 MORE GAS MILES PER GALLON... UP TO 6,000 MILES WITHOUT AN OIL-CHANGE... UP TO 100,000 MILES WITHOUT A SINGLE MAJOR REPAIR!** I simply return the used **MAGNA POWER**—it didn't cost me a penny to begin with! But if 30 full days of test driving has absolutely amazed and convinced me that **MAGNA POWER** can add years to every part in my engine... can give my present car the blazing new pep, power and performance that I never dreamed possible... then and only then do I send you the amazingly low price of \$4.98 and **MAGNA POWER** is mine to keep for year after year of power driving!

NAME _____ ZONE _____ STATE _____
(Please Print)

ADDRESS _____

CITY _____ ZONE _____ STATE _____

Please send me two **MAGNA POWERS**. If satisfied after 30 days, I send only \$4.98. (This will be a savings of \$1).

MAKE OF 1st CAR _____ YEAR _____

MAKE OF 2nd CAR _____ YEAR _____

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90,000 MILES AND ENGINE GOING STRONG!

"I have a Magna-Power in my Hudson and also my Plymouth and they are both running and in perfect shape. The Hudson has 90,000 miles and the Plymouth has 65,000. Neither one has had the head off."

C.A.W. Jefferson City, Missouri

"I received two of the Magna-Power Plugs from you and installed them in a 1950 Studebaker Land Cruiser which now has 130,000 miles registered and also in a 1953 Studebaker Champion which we just recently traded in for a new one showing 74,000 miles... I must state that from all existing appearances, very desirable results were secured from these units."

R.N.J. Des Moines 8, Iowa

OVER 4,000 MILES ON THE SAME OIL!

"My 1951 Hornet had almost 50,000 hard miles on when the Magna-Power plug was installed. It ran over 4,000 miles on the same oil. Ordinarily, the oil would have been black after a few hundred miles."

Bernard H. Hutchins, Florida

West Palm Beach, Florida

"Thought you might be interested... Put Magna-Power on my 1955 Plymouth at 500 miles. Now have 21,000 on speedometer. No oil used in 4,000 miles. Change approximately each 5,000. Garage mechanic auto-inspected and changed 1 put in gas. Has accused me of adding oil. Gas mileage 21 miles to gallon."

G.S. Bradford, Conn.

NOW GETS 12 MILES PER GALLON!

"My '47 Ford... gets fantastic gas mileage now, 22.5 miles to the gallon, it used to get 15... your spiritizer is the only thing I can account for the radical change."

Thad R. Waldman, Gutterbach, Iowa

"Have 1950 Studebaker President with 20,000 miles on it. Plugs have never been cleaned, changed or altered—same points—no adjustment. Get 20 miles per gallon. Uses no oil."

W. J. Wadman, Johnson City, Tennessee

"In October of 1953 I purchased a Magna-Power for my 1941 Ford V-8 and want to say that much—it is the best single investment I ever made for an improvement on the engine of any car. My original engine had 70,000 on one set of spark plugs. Enough said."

R.V. Laundry Machinery Co., Albuquerque, New Mexico

7,000 MILES WITH SAME SET OF SPARK PLUGS!

"We have a fleet of four trucks and two salesmen's cars, all equipped with your marvelous acid neutralizer. We had exceptional success with them. One car, a 1953 Hudson Hornet with twin '47' power now has 70,000 on one set of spark plugs. Enough said."

R.V. Laundry Machinery Co., Albuquerque, New Mexico

LIKE HAVING A NEW CAR!

"I now have 80,800 miles on my '50 Buick. Due to the fact that I have always used the same oil, I want to give credit to this wonderful Magna-Power plug you sell. My Buick has never needed the hydraulic lifters or any valve job. Frankly, it's almost like having a new car." C.E.C. Kansas City, Mo.

"I recently purchased a Magna-Power acid neutralizer for my Olds 88. In a little over 500 miles the results are amazing, faster pick up, cleaner oil, quieter engine. The engine has taken on new life. In fact, I am an auto mechanic for over 20 years and have been turning thumbs down on most such things until I read about Magna-Power."

L.L.M. Philadelphia 31, Pa.

PHOTOGRAPHIC PROOF!

Drive Up to 5 YEARS WITH ONE Set of Spark Plugs!

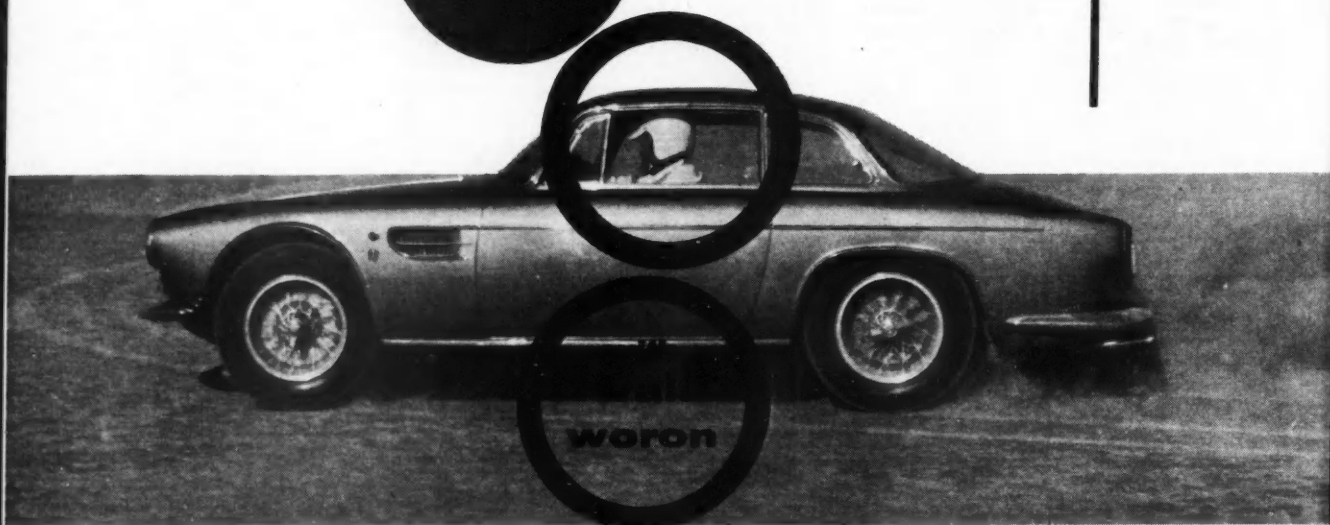


IMAGINE! The spark plug on the left was removed from an ordinary car after 5,218 miles. It is firing poorly, is choked with filth... barely able to give half the spark it should! But the plug on the right—taken from a **MAGNA POWER** equipped car—after 6,018 miles—still able to give full, hot, strong power on every single stroke! Discover how every detail part in your engine can last years longer than you ever dreamed possible!

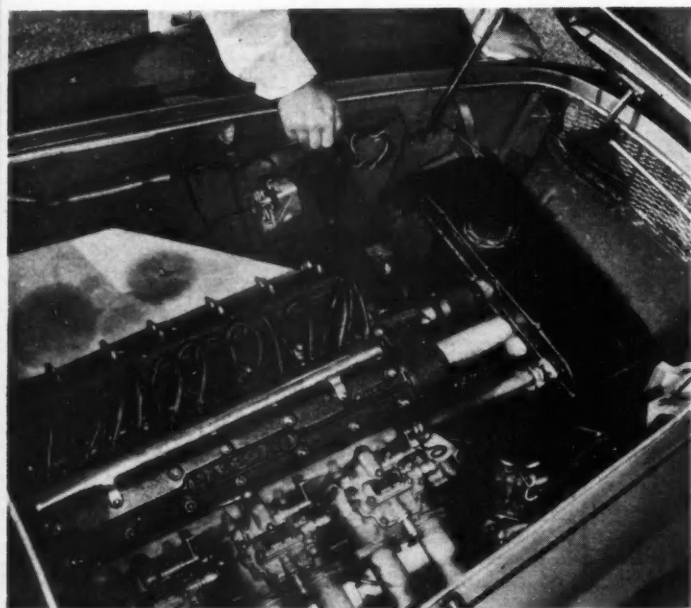
WE DROVE THIS ITALIAN BEAUTY SOME TIME AGO—
THIS TIME WE GAVE IT A THOROUGH SHAKEDOWN AND
HAD GREAT FUN PUTTING IT THROUGH ITS PACES

driving
around

Maserati



ROCK-STEADY handling characteristics make this one a pleasure to drive at any speed.

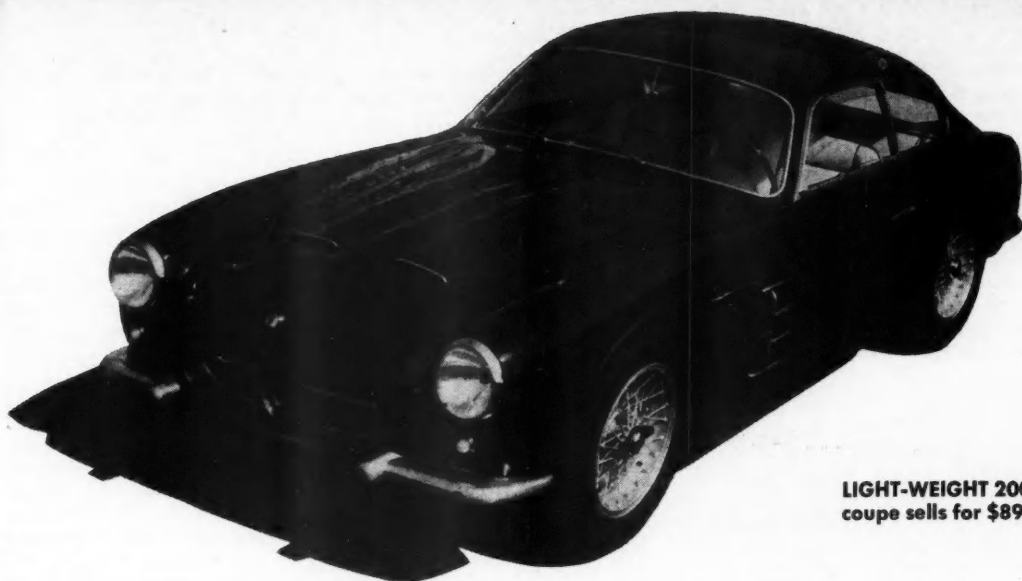


HYDRAULIC FLUID reservoir shown here on left side
of engine compartment has control which permits
bleeding air from brake lines without removing hoses.

TWO ISSUES AGO we introduced you to the Maserati 2000-GT, the bambino of the Officine Alfieri Maserati family of Modena, Italy. The "2000" stands for 2000 cubic centimeters (equal to 122 cubic inches), with the "GT" signifying Gran Turismo (Italian for Grand Touring, literally an "almost" sports car). Bigger brothers that use the same six-cylinder engine include a lustier sports car version (200-S), a huskier 3000 and 300-S, and a forthcoming newcomer to the family in the 3500 (a 230-hp six). The 150-S is a sports-car version using a 140-hp four, while another competition model, the 4.5-liter V8, is deemed by Maserati to be the fastest sports car in the world. This it will have a chance to prove at Sebring March 23rd.

THE 2000-GT COMES WITH ONE OF THREE BODIES, fitted to the Maserati chassis: the Allemano coupe, the Frua convertible and coupe, and the Zagato coupe. Our test car had the heavy Allemano body, a full 600 pounds more than the fairly light Zagato 2200-pounder. You can see, then, that the performance we got from the car furnished to us by Maserati Southwest Distributors would be considered at the bottom of the scale. Where the Allemano 2000-GT could go from 0 to 60 in 12.6 seconds, the Zagato 2000-GT would probably make it in around 9.5 and the 300-S could no doubt do it in under eight.

Prices depend pretty much on engine size and body, but if you're not in the chips or if you don't have access to a five-year loan, turn the page before you get too desirous of having the Neptune-derived Maserati emblem gracing the next car in your garage. If you have the cash, you'll be interested to know that prices for the 2000-GT models start at \$8900 for the Zagato coupe and go through \$10,450 for the Frua convertible. The Allemano coupe goes for \$9500, but of course that includes



LIGHT-WEIGHT 2000-GT Zagato coupe sells for \$8900.

leather upholstery, Borrani knock-off wire wheels, racing brakes, radio, heater, and tool kit.

Seems like lots of money to pay for the sake of getting people to stare and ask, "What is that?" Yet you have something that's as different from the ordinary car as this magazine is from television "soap operas." You have a car in the tradition of the "brute sports car" but with the blessing of one of the most beautiful bodies ever fitted to any chassis. On top of this, it's put together as a piece of quality merchandise should be, it handles superbly, has incomparable vision, and gives you a feeling of absolute security on the open road.

Yet, it has what could be termed faults. It has no torque on the bottom end of the rpm range and so you have to use the gears constantly to overcome this disadvantage. It's not easy on gas, averaging only 13 mpg on this test. The brake pedal is too close to the throttle for anyone wearing shoes wider than AA. The noise level is extremely high. The ride is choppy, as it well should be with such fantastic roadability and little evidence of lean. And yet it has an indefinable quality that will partially or totally diminish these complaints.

UNLESS YOU LOVE MECHANICAL SOUNDS you may not take a liking to the Maserati. From the moment you first turn on the ignition you enter a new world of sounds: a loud "click-click" indicating the fuel pump is operating, the "ka-chum, ka-chum" of the six cylinders being fired by the radical camshafts, the "ha-rruuuUUUMM" of the engine as you peak it in each gear, the high-pitched sound of the Pirelli tires on pavement. When you switch off the ignition, the sudden quiet engulfs you.

Above all else, the engine itself probably contributes the most

to the noise, with the air screeching through the double intake ports of each of the \$250 Weber carburetors, and the cam chain whipping around at a fantastic rate to keep the twin overhead camshafts opening and closing the inclined valves at the right times. But despite any noises that might be forthcoming from the deep-sided six, the chances of things going wrong—if it's given normal care—are slight.

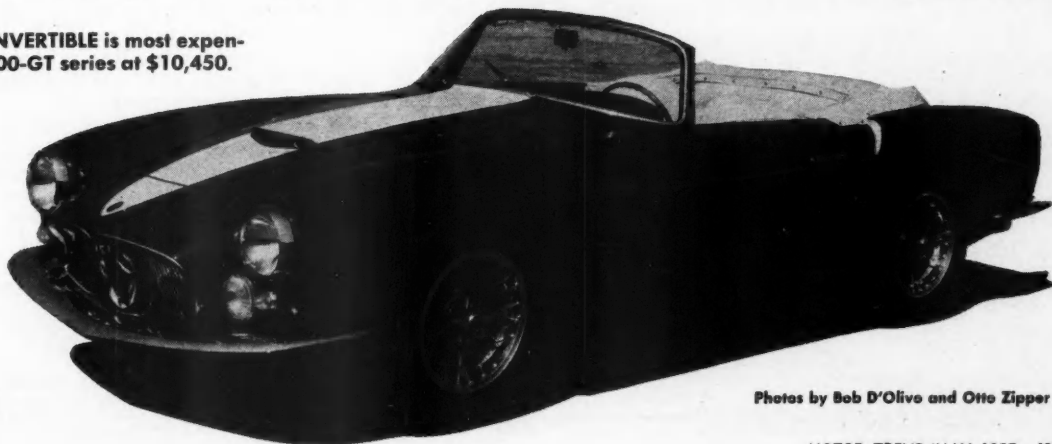
Giorgio Neri, Italian mechanic for Maserati, was in town on his way through from Argentina to Sebring. He stopped off at both Maserati West Coast distributors, North Hollywood's Maserati Southwest Distributors and San Francisco's Mille Miglia Motors. Here he was to instruct mechanics in the fine art of tuning the sensitive Maserati engines. Besides tuning the engine of the Allemano coupe I drove, he also gave me what I'd take to be good reason for assuming that these quality engines aren't about to fail under normal circumstances. ALL engines are bench tested and run in for eight hours at different rpms up to 6000. One test after the sixth hour is to see how quickly it will reach 6000 revs; if it's too slow, it's torn down to find out why.

IN ORDINARY DRIVING, this particular Allemano Maserati was a bit of a chore to shift, mainly because the transmission did not have synchro-mesh gears as the specification chart leads one to believe. It seems that the straight-cut gears in the transmissions of all presently-delivered Maseratis will be replaced by new synchro gears. All new Maseratis are equipped with the new transmission, described by Neri as being "like a Porsche, only better." And that's pretty great.

In the meantime, we had to suffer through with the more

continued on next page

FRUA CONVERTIBLE is most expensive in 2000-GT series at \$10,450.



Photos by Bob D'Olive and Otto Zipper

difficult-shifting gearbox, which probably gave poorer acceleration times than could have been obtained with the new box. In street driving it was seldom possible to make a fast or smooth shift, unless we double-clutched.

TO MAKE THE BEST POSSIBLE TIMES, the factory mechanic instructed us to rev the engine at 2500 while at a standstill, let the clutch out slowly, then as the car begins to roll, pop the clutch. Revving it higher and popping the clutch would quickly wear out the single-disc clutch he warned. The best shift point was 5500, with a max rev limit of 6000, though our best times were not gained by following his advice. We improved the quarter-mile times almost a full second by revving to 4000 and then popping the clutch. (We were careful not to let the clutch-

plate overheat, though.) The average of two runs each in opposite directions and the gears used were:

0-45 MPH	0-60 MPH	1/4-MILE
8.2	12.6	19.0 and 76 mph
(1st, 2nd)	(1st, 2nd, 3rd)	(1st, 2nd, 3rd)

The *fastest* runs were 8.0 to 45, 12.5 to 60, 18.9 and 77 mph in the quarter. Top speed in first, second and third at 6000 revs was 30, 60, and 80, respectively.

THE MASERATI HANDLES SUPERBLY—make no bones about that. The only thing that could improve this particular one would be a hotter engine to pull you out of the corners a bit faster. In this car you feel safe at practically double the speed with which you'd take a corner in an ordinary car.

Steering is quick and precise. Aim the nose into a corner and chances are you'll follow the arc you've set up. If you over-extend yourself, you'll find yourself in a beautiful four-wheel drift. On rough or smooth roads, the car's attitude is the same. The only place I could break loose the rear end was on wet pavement and on the soft surface of El Mirage Dry Lake. When the back end did go, all I did was correct slightly, let it slide, develop into a four-wheel drift, and easily get back on course.

What else there is about the Maserati's cornering ability and other matters of interest could well take up several more pages. Instead of doing that, I'd like to give them to you in the form of notes I made while driving the car for 1200 miles over a period of two weeks.

DRIVING ON THE OPEN ROAD. No corrective action required on straight road. Moves sideways slightly in heavy crosswinds. Crown roads don't cause car to pull to lower side. Feels safe, no airborne feeling, right up to top speed of 117 mph. Doesn't wallow coming out of dips or over bumps. Maintains control even when going off road shoulder. Doesn't swap ends on rough or washboard roads. Only slight steering wheel vibration on rough roads. Arm position tiring for long periods because wheel located high. Better for fast control if couple inches lower. Front end not heavy in turns. No wheel fight. Never uncontrollable in turns. Body lean barely noticeable to driver.

RIDE. Bounces on normal dips, but recovers so quickly it's almost like no bounce. Same on bad dips, taken slow or fast. Has quick recovery. No sidesway on streetcar tracks. Ride is choppy on anything but absolutely smooth surface. Some noise and feel of road surface, but not objectionable.

BRAKING. Pedal close to throttle and have to be careful not to hit throttle when braking. Works fine with narrow shoes and by pivoting on heel. Pedal soft at first, then hard. No fade during hard mountain driving. Very slight fade after continuous acceleration runs. No swerving.

GETTING IN AND OUT. Doorhandles are pushbutton. Door stays open, except on steep incline. Inside doorhandle far forward. Nothing to bang yourself on or wrap around as you get in. Door closes solidly. Locks with special key on driver's side only.

ONCE YOU'RE IN. Instruments are large speedo and tach, water temp, oil pressure, fuel capacity. Grouped well for quick reading. Use white numbers, letters, and needles on black background. No "hot spots" off chrome, no paint reflections. Slightly hooded section above instruments prevents reflection on windshield at night. Bottom of panel has rolled, soft edge, covered with leather. No glove compartment, but pouch in each door. Like many other Italian cars, windows take many cranks to roll up.

Seats are bolstered, not bucket. Very comfortable. Adjust fore and aft, and seatback reclines. Leather upholstery standard. Legroom adequate in front seat, barely so in back. Small rear jump seat suitable only for tiny tots, or luggage.

MY CONCLUSION? Here's a car you have to treat somewhat like a new pair of shoes at first. The more you wear them the better they feel. But while you're growing used to them, you're apt to feel much like a tamer whipping his lions into shape. It takes a good long while before you become the true master of your machine—and then you'll have a camaraderie such as has rarely existed between man and inanimate object.



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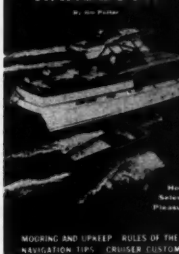
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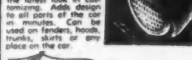
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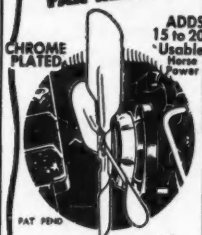
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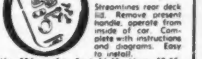
Tested and proved at Indianapolis Speedway under supervision of United States Automobile Club.

Flow of air thru the radiator core at speeds of 30 MPH provides sufficient cooling and makes the operation of the fan automatic.

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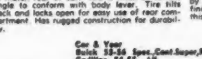
Large, Life-like White Furry Cat. Eyes light up. Very easy to install.

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Removes trunk lid. Remove trunk lid. Remove trunk lid. Remove trunk lid.

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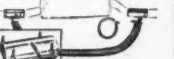
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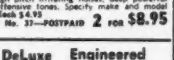
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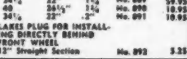
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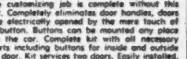
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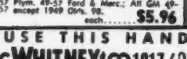
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Our customer job is complete without this kit.

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This Electric Trunk Kit makes the Custom Car Owner's job easier.

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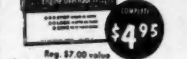
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Give TWICE! Get REAR VIEW mirror that regular Mirror. Attaches to Headlight.

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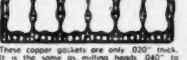
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Increases riding more than 100%.

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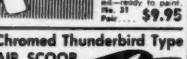
HIGH COMPRESSION RING GASKETS EXTRA-THIN .020" SOLID COPPER



These copper gaskets are only .020" thick.

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For use in Custom Car. Hot rod fenders.

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Long tubing Thunderbird type air scoop.

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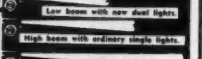
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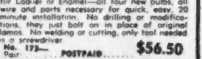
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'57 Chrysler Wins MT Award

continued from page 19

entirely new approach to power propulsion, a great forward step in brakes, or a totally new concept in interior packaging. And it need not be an engineering improvement per se, though we shall not give the award for a styling innovation that in itself does not contribute to progress. We shall also disregard improvements that *should have been made* on previous models. In that year when no positive improvement is made by any manufacturer (Heaven forbid!), there will be *no* MOTOR TREND Award.

From the very beginning of this model year, it was apparent that the Chrysler

findings in the light of improvements made on many of the other '57 cars. We looked back over the comments we had made while road testing the various Chrysler products:

We had rated the Plymouth as being much more roadable than in '56, "with truly excellent cornering ability." We said, "You'll be able to negotiate all ordinary curves with ease and comfort, and quite extraordinary ones with safety."

In the Dodge line we had tested the D-500 and were so enamored of the car's excellent cornering characteristics that we paid it what we felt to be the highest compliment: "The D-500 is for the special buyer who wants superb handling above all other considerations."

After testing the DeSoto we wrote, "The torsion bar front suspension has greatly improved general handling characteristics



EDITOR presents award to Chrysler Executive Engineer A. G. Loofbourrow

products would be good contenders for the 1957 MOTOR TREND Award. At first acquaintance with the Chrysler products at the proving grounds last October, we had these things to say about the new Torsion-Aire suspension:

"THE PLYMOUTH'S FLATTER CORNERING and nearly dipless stopping is welcomed by the MT staff . . ."

"The Dodge's ride remains smooth, but is better controlled, especially on corners—and stopping is flatter and pleasanter."

"The DeSoto is a far better car to drive, ride in, or stop in than ever before . . ."

"The Chrysler's weight distribution is close to that of last year's models, which makes all the more dramatic the improvements gained through the new suspension."

"Along with luxury in full measure, the Imperial has new-found ability to round a corner without teetering . . ."

OUR EXHAUSTIVE ROAD TESTS on all this country's production cars were completed just a short while ago. We then had time to sit back and re-evaluate our origi-

and has virtually eliminated nose-diving when braking."

WHEN WE HAD COMPLETED our thorough test of the Chrysler (see page 20) we were completely convinced that all the Chrysler products were deserving of the highest praise that MOTOR TREND could bestow. That praise is in the nature of the 1957 MOTOR TREND Award.

Our heartiest congratulations to the engineering staff and to the management of Chrysler Corp. for providing superior handling and roadability qualities in their Plymouth, Dodge, DeSoto, Chrysler, and Imperial.

ALL THINGS CONSIDERED

Road testing and evaluating the 1957 cars gave the editors of MOTOR TREND the opportunity to appraise all outstanding developments of the year. Many had merit as adventuresome forward steps. Some were admittedly untried and limited to a few semi-production models. Others represented efforts to correct ex-

isting design deficiencies by expedient and inexpensive methods. A few were in the optional, luxury-equipment class. All reflected progress and achievement. The industry is to be commended for these contributions:

PRODUCTION CATEGORY

CHEVROLET—The Turboglide represents a substantial advance in automatic transmission design. The unit is characterized by smoothness of operation and an HR (HILL RETARDER) control which utilizes an energy transfer reversal in the torque converter turbine purely to retard speed on downhill grades.

MERCURY—The Power Booster fan is a sensible, power-conserving device. This thermostatically controlled, free-wheeling unit operates automatically upon engine cooling demands and requirements.

The Seat-O-Matic front seat control features indexing of a selected seat position, automatic rear-and-downward retraction to permit easy entry or exit, and automatic return to a pre-selected position.

OLDSMOBILE—Flanged brake drums represent an expedient but progressive step toward better brake cooling and the lessening of brake fade.

STUDEBAKER—Coil springs, which compress, coil by coil, at an unequal rate contribute to better riding characteristics.

Finned brake drums provide better cooling and another approach to the brake fade problem.

LIMITED PRODUCTION CATEGORY

CHEVROLET—The courageous introduction of fuel injection will probably lead the way to greater engine efficiency and the elimination of undesirable characteristics inherent in present carburetion systems.

FORD—The retractable hard top may initiate a new trend in convertible body design which could eliminate the usual objections to soft tops.

RAMBLER—Another production fuel injection system is to be commended as one of the first used in a U.S. passenger car.

ANOTHER NEW MINICAR



ARTIST'S CONCEPTION of the English Frisky to be built by Henry Meadows Ltd.

Accurate Readings and Custom Styling ACROSS THE BOARD

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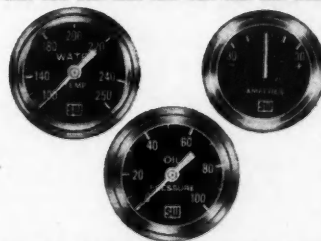
Matching Tachometers and Speedometers

Electric or mechanical type. Both instruments have full-sweep 270° dials, positive-action pointers, and large 3" dial faces. 3 1/2" diameter cases, built-in indirect light sockets, and chrome-plated bezels. Odometer registers up to one billion engine revolutions. Heavy-duty construction for long life.



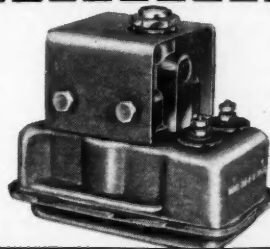
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START FINISH
NO SURE WITH PURE

Motor Sports

When is a STOCKER not a STOCKER?

WHEN IT RUNS IN A "STOCK-CAR RACE." HERE ARE SOME OF THE TRADE SECRETS THAT HELPED WIN AT DAYTONA

by Don O'Reilly

IT IS NOT PARTICULARLY ENLIGHTENING to any reader of this column for us to comment that late-model stock cars used in racing bear little resemblance, internally, to the car you drive out of your dealer's showroom.

A couple years ago, Nascar backed away from definitions such as "strictly stock" and "standard production" and defined the racing cars as "meeting Grand National specifications." Now, USAC is looking for a new name to replace "stock engine division." Variations from stock today are not so much in the use of other-than-factory parts as they are in the assembly of chassis and engine.

Let's take a look at the development over the past eight years.

When Bill France introduced late-model stock-car racing to the American public back in 1949, he was immediately faced with the problem of "keeping them stock." The winner of the very first race was disqualified for illegal alterations and Nascar subsequently won a \$10,000 lawsuit.

With the court decision in the background, associations have gone confidently on their way trying to enforce rules and specifications. It was a battle of wits during the first couple years, with mechanics keeping a jump ahead of inspectors, slipping in new modi-

fications as fast as old tricks were discovered.

"Cheating" became a commonly used word, but without the usual connotation. After all, the mechanics had been so used to legally modifying stock engines for racing, it was only second nature to follow through in similar fashion.

Nascar permitted certain changes, realizing stock engines were never designed for the particular kind of punishment racing delivered. In the meantime, AAA's Contest Board tried to require the engines in their races be absolutely stock, and for a while they even considered prohibiting any chassis reinforcements. They, too, fought a losing battle with the mechanics.

After the era of individual "cheating" and modifications, the factories became interested in the sport and, as Henry "Smokey" Yunick said recently, "We found out where the 'cheaters' really lived." If a stock item wouldn't stand the strain, the factories made a special part, catalogued it and then proclaimed it to be strictly stock. It mattered little that most dealers never even heard of it.

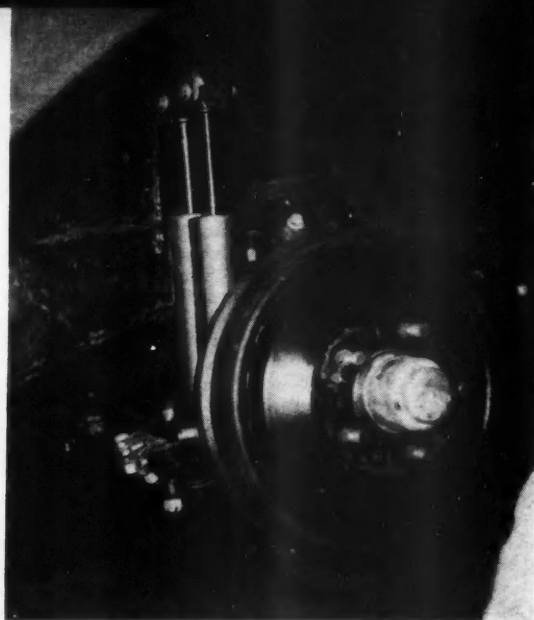
The more recent phase was to build an entire model, designed for high performance, and produce several hundred to qualify as stock. However, the quantity is such a small

fraction of the cars sold to the public that you'll look a mighty long time before you'll meet one on the highway. Right here, we want to emphasize we are talking in generalities and this description of activities does not apply to all factories, nor to all mechanics.

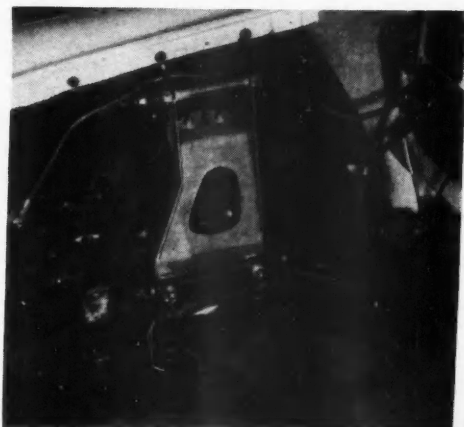
IMCA requires all engine components to be "factory parts" except pistons, which must be "the same weight and design as factory pistons." The factory parts must be "immediately available to all drivers or car owners." The foregoing obviously may be interpreted as referring to race-car owners, rather than the general public.

USAC and Nascar rules are far too complex to go into here, but generally require all parts to meet factory specifications. Grinding, polishing and alterations are prohibited. There are no limits on the type of camshaft used, because it is realized the factories are supplying the best that can be had. If you can show them ways to improve it, they'll do it fast! Certain stock replacement items, such as piston rings, spark plugs and air cleaners, are permitted in most cases.

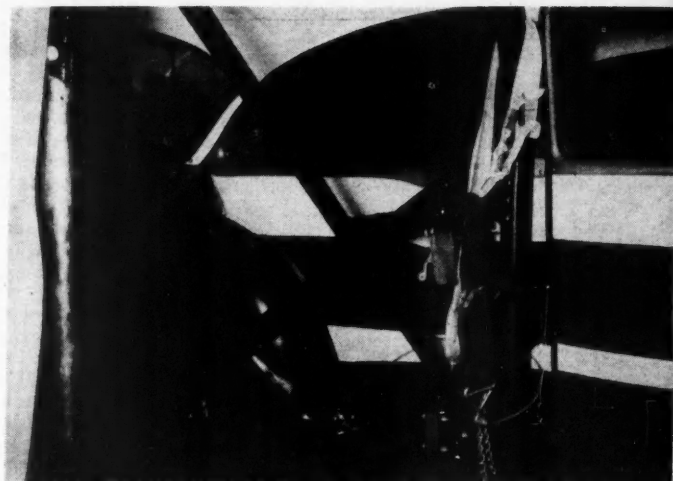
It is the consensus there is far less "cheating" now than in the past, attributed to the fact that the factories are providing the best



PONTIAC (above) also had extra pair of front shocks and special mount. There were few other structural changes.



SHOULDER HARNESS gear installed in Mercury. Quick-release handle is mounted on door.



PONTIAC safety harness before seat installation. Take-up reel mounted on diagonal roll bar member permits the driver to move freely under normal conditions. Quick, seven-pound tug on harness will lock reel and secure the driver in his seat.

CHANGES IN MERC

front suspension (above) included dual shocks plus Air-Lift bags mounted on special brackets.

MERCURY seats have raised and padded section on driver's right to simulate bucket seat. Inside lug for door bolt, required as safety measure, shows at lower right. Other driver safety and comfort additions include husky and securely mounted seat belt, a front roll bar, and taped wheel.



Motor Sports

continued from preceding page

that can be had. When mechanics have ideas for improvements, they now tell the factory engineers, who attempt to follow through.

Variations from showroom stock is in hand-assembly and the fact that equipment is expendable . . . very expendable.

Many cars off the assembly line provide faultless highway service, but recall for a moment the number of new cars which you know were taken back to the dealers for adjustment or replacements after a couple weeks' use.

Stock cars on race tracks must be the peak of perfection, because of the unusual stress, strain and abuse.

First, the engine and body are removed and the chassis stripped. Reinforcements to the frame, additional engine supports, extra shock absorbers, heavy-duty wheel and steering assemblies and other items are added, primarily for safety.

Engines are completely disassembled. From batches of dozens and sometimes hundreds are selected the few sets of connecting rods, push rods, pistons and other items. Manifolds are closely examined to select the most perfect pair from an entire day's production. The same with camshafts and crankshafts. Connecting rods and pistons, for example, are weighed on a gram scale so the entire set is in perfect balance. Rules prohibit altering of these items, so hand selection and microscopic examination is an adequate but time-consuming substitute.

Specifications allowing for normal wear were originally intended to permit the individual competition car owner to continue using slightly worn engines for economy reasons. The operators with large resources

take a new engine and create that wear at the beginning, so when it is bolted together, it will be free and loose for fast operation. Mufflers are removed, and larger and straighter exhaust pipes are installed to relieve back-pressure.

Larger radiators, with coarse tubes and more open space between cores are installed, for free-flowing, faster-cooling water and to prevent clogging by speedway dirt. Radiators are also moved forward a couple inches to allow for better circulation of air between radiator and fan, and to prevent the radiator from being pushed back into the fan during a collision.

Spark and timing adjustments are made to give the best accelerating and high-speed performance. The car may idle roughly (of no importance on the speedway, but you'd object to it in your own city-traffic family car).

In short, you select the best parts the factory can offer, simulate a little wear in the right places, reinforce the chassis and vital assemblies for safety, then assemble the engine and car with the precision workmanship of a jeweler building a fine watch.

Not including the availability of vast supplies of parts from which to select the items for this race car, it costs a minimum of \$3000 in time and labor (over the original cost of the car to the public) to build a car for racing.

Before the car ever goes on the race track, it is dynamometer-tested and often torn down and reassembled a couple of times. And if the engine "blows up" in practice or in a race, so what . . . remember, equipment is very expendable.

To top it off, after the car has been in a race, the tear-down and rebuilding starts all over again, adding to the expense. Many top owners have a pair of cars with identical numbers, using one this week and the other next week, permitting two weeks for rebuilding after each race.

To indicate the degree of perfection, consider the Chevrolet fuel injection system: a

jeweler's drill, with the drill bit so hair-fine that a magnifying glass was needed for the operation, was used to enlarge the jets.

How can inspectors measure items that fine, without the use of expensive equipment?

While some "cheating" and illegal alterations are getting by the inspectors, as a rule the modifications come under the heading of precision workmanship as permitted in the rules. Inspection is spasmodic and as one driver recently observed, "Sometimes it looks as if the rules were made out of rubber bands."

* * *

INDY '57

COMING UP ON MAY 30TH will be the history-making Indianapolis 500-mile race. History-making, because the first three finishers will be invited to join seven other pilots in the American vs. European 500-mile event at Monza, Italy, June 29th; and because the race course itself has had its first major face-lifting in years.

The famed Pagoda is gone, the new Tower Terrace is being built and the pit area changed considerably. Entries are pouring in, and as usual the field will be made up of the Offys and Novis, with the possible exception of a couple European or otherwise different powerplants.

Next month, in this space, we'll present a comprehensive preview of this year's 500. Look for it on your newsstands in mid-May, a couple weeks before the race. In the meantime, order your tickets at once, from the Speedway office at Speedway City, Ind.

* * *

MORE ABOUT MONZA.

WITH LONG-TIME FRIEND COUNT

JOHNNY LURANI as interpreter, we interviewed Col. Aleardo Covacovich, Managing Director of the 24,000-member Automobile Club of Italy concerning the upcoming 500-mile race June 29th. The meeting of U.S. and European drivers was first conceived by the Central Committee of the Auto Club of Milan and correspondence went back and

what's coming up?

april

- 19-21, SCCA Sports Cars, Oahu, Hawaii
- 20, NASCAR Convertibles, Hickory, N.C.
- 20, NASCAR Short Track, Sacramento, Calif.
- 27, NASCAR Grand National, Spartanburg, S.C.
- 28, NASCAR Grand National, Hillsboro, N.C.
- 28, NASCAR Convertibles, Old Bridge, N.J.
- 28, VW Club of America 2nd Annual Convention, Hillburn, N.Y.
- 28, USAC Sprints, Salem, Ind.
- 28, USAC Stock Cars, Vallejo, Calif.
- 28, SCCA Sport Cars, Marlboro, Md.

may

- 3, USAC Midgets, Phoenix, Ariz.
- 3-5, SCCA Sport Cars, Danville, Va.
- 3-5, SCCA Sport Car Rally, Ohio
- 4, NASCAR Grand National, Shelby, N.C.
- 4, NASCAR Short Track, Manassas, Va.
- 5, NASCAR Grand National, Richmond, Va.
- 5, NASCAR Convertibles, Langhorne, Pa.
- 5, NASCAR Short Track, Gardena, Calif.
- 5, USAC Sprints, Winchester, Ind.
- 5, USAC Sprints, Newtown Park, Conn.

- 5, USAC Races, Phoenix, Ariz.
- 5-11, Tulip Rally, Holland
- 11, NASCAR 300-mile Convertibles, Darlington, S.C.
- 12, Mille Miglia, Italy
- 17-19, USAC Sport Cars, Cumberland, Md.
- 17, NASCAR Convertibles, Charlotte, N.C. Fairgrounds.
- 18, NASCAR Midgets, Wall Stadium, Belmar, N.J.
- 18-19, Indianapolis Qualifications
- 19, MARC 150-mile Stock Cars, Atlanta, Ga.
- 19, URC-AARC Sprints, East vs. West, Williams Grove, Pa.
- 19, NASCAR 250-mile Grand National, Martinsville, Va.
- 19, NASCAR Convertibles, Norfolk, Va.
- 19, Grand Prix of Monaco
- 23, USAC Midgets, Detroit, Mich.
- 25, USAC Midgets, Kokomo, Ind.
- 25, NASCAR Midgets, Islip, L.I., N.Y.
- 25-26, Indianapolis Qualifications
- 25-26, SCCA Sport Cars, Thompson, Conn.
- 25, NASCAR Convertibles, Spartanburg, S.C.
- 25, NASCAR Short Track, Bowman Gray, Winston-Salem, N.C.
- 26, NASCAR Grand National, Norfolk, Va.
- 26, NASCAR Grand National, Portland, Ore.
- 26, Nurburgring 1000 Km, Germany
- 27, Canadian Autorama, Queens Park, London, Ontario, Canada
- 29, NASCAR Short Track, Gardena, Calif.
- 29, USAC Midgets, 16th Street Speedway, Indianapolis, Ind.
- 30, Indianapolis "500"
- 30, USAC Midgets, Lafayette, Ind.
- 30, NASCAR 2-mile course Grand National road race, San Diego, Calif.
- 30, NASCAR Grand National, Eureka, Calif.

- 30, NASCAR Convertibles, Syracuse, N.Y.
- 30, Rally of Germany. (Runs until June 2.)

june

- 1, USAC Midgets, Detroit
- 2, USAC Midgets, Saginaw, Mich.
- 2, USAC 100-mile Championship, Langhorne, Pa.
- 3, Grand Prix of Belgium
- 7, USAC Midgets, Cincinnati, Ohio
- 8, USAC Midgets, Chicago
- 9, USAC 100-mile Championship, Milwaukee, Wis.
- 11-16, Midnight Sun Rally, Sweden
- 13, USAC Midgets, South Bend, Ind.
- 14, USAC Midgets, Springfield, Ill.
- 15, USAC Midgets, Detroit
- 16, USAC Sprints, Reading, Pa.
- 16, Grand Prix of Holland
- 19, USAC Midgets, Galesburg, Mich.
- 20, USAC Midgets, Grand Rapids, Mich.
- 21, USAC Midgets, Crystal Lake, Mich.
- 22, USAC 100-mile Championship, Detroit
- 22, USAC Midgets, Chicago
- 22-23, LeMans 24-Hour Race, France
- 27-30, USAC Midgets, Kokomo, Ill.
- 29, Geneva Rally, Switzerland
- 29, USAC Midgets, Indianapolis, Ind.
- 29, Monza "500," Italy

july

- 4, Pikes Peak Climb, Colorado
- 4, USAC 100-mile Championship, Atlanta, Ga.
- 7, Grand Prix of France
- 20, Grand Prix of Europe, England
- 21, USAC Championship Sprints, Williams Grove, Pa.

forth, but nothing materialized.

Suddenly, Duane Carter, USAC Competition Director, received a cable to the effect the Italians had made plane reservations for him to leave New York the following day. Somehow, Duane made plane changes, packed, rushed to New York and caught the Friday flight. The arrangements were completed at that conference.

The Italian club is spending 150 million lira on the event, equivalent of \$260,000, three times the largest amount ever spent before on a European race.

Special cars are being built in Europe, including Ferraris, Maseratis and a 500-horsepower supercharged BRM. The race plant is being refurbished, with stands erected to seat 20,000 spectators and other accommodations on the surrounding hills for 150,000 people.



CUBAN Grand Prix winner Fangio receives award from General Batista, Cuban President.

The race will be run in three equal-distance stages, because officials are doubtful the cars or drivers could stand an uninterrupted 500-mile grind on the 2.64-mile high-speed oval course.

Previously, this high-banked oval has been used only in connection with the road-type course over which the cars speed through a tunnel under one of the banks, down the infield, turn right and onto the inside of the main straightaway, around the high-speed course, and off it from the outside of the straightaway, back onto the road course.

No car has ever before run a long distance continuously on the 2.64-mile oval. Gravity pressure is $2\frac{1}{2}$ times the weight of the car on the track and a 150-pound driver, for example, will be forced down into the seat with the force of 375 pounds.

Firestone is developing new tires for U.S. and European cars, making tests on the track with their own Indianapolis car. There is little side-thrust as the cars hurtle into the Monza turns, but the vertical pressure is

extensive. The concrete surface may be more abrasive than Indianapolis' asphalt.

Ten Indianapolis cars will be transported on the liner *Constitution* June 12th, returning from Genoa July 14th. Ten drivers, 20 crewmen and three officials will fly from New York June 23rd, leaving Milan for home July 1st.

Selected for the trip are National Champion Jimmy Bryan, Troy Ruttman, Johnnie Parsons, Tony Bettenhausen, Sam Hanks, Paul Russo, Pat O'Connor, and the three front-runners at Indianapolis.

Should there be duplications, and there might well be, the added trio will be picked on a merit basis. There is some confusion, due probably to language obstacles, which will have to be worked out. Colonel Covacovich says the fastest 20 cars will start, and he presumes the 10 Americans will be in that category. Duane Carter thinks the deal is the U.S. drivers are guaranteed starting positions. Covacovich thinks the deal is reciprocal and that the 10 Europeans will be invited to compete at Indianapolis in 1958, but officials here haven't yet solved the problems.

If the Americans' expenses are paid by Italians, who's going to pay the Europeans' expenses here in 1958? If the 10 U.S. cars are guaranteed starting positions, how will Indianapolis be able to offer the same guarantee in 1958?

Europeans will have to build special cars for Indianapolis competition, but their experience with the new cars at Monza should help. Few changes will have to be made in the U.S. Offys and Novis for the Monza race, as it will be run counter-clockwise, as in this country.

In any event, the operation is a step in the right direction and can lead to greater international competition in the future, of benefit to all nations and to better world-wide understanding.

FROM NEW YORK CITY'S Idyllwild airport to Havana's *aeropuerto* took only about six hours by Cubana Airlines Constellation, including clearance through customs. The reason for this junket was, of course, to report on Cuba's first attempt at staging a 500-kilometer Grand Prix race.

Sponsored by the Cuban National Sports Commission, the race was distinguished by several "firsts." In addition to being Cuba's first Grand Prix, it was the first in the Western Hemisphere to be run on a circuit consisting entirely of city streets, and is said to have offered the biggest bundle of prize money (50,000 pesos, which now have the equivalent of U.S. dollars) for any sports-car race in the world at this time.

A major portion of the circuit was laid out on the Malecon, Havana's famed divided freeway, which borders the sea. The long straights offered by this section made bursts of speed in excess of 165 mph possible. Passing took place everywhere except on two or three right-angle corners. Spray from the surf adjacent to the Malecon was an intermittent hazard and if the spectators' risk was a calculated one, it ran into high figures. This was partly compensated for by very good spectator control and policing of the course.

The old master, Juan Manuel Fangio, upheld his winning streak by riding his

Maserati home in 3 hours, 11 minutes, and two seconds for an average of 158.296 kilometers per hour. Texan Carroll Shelby was next in a big 4.9 Ferrari, just 69.3 seconds later. The Marquis de Portago of Spain, in a Ferrari, drove a brilliant race and led for two hours until a long pit stop for a cracked fuel line spoiled his chances. He did, however, manage a close third and the distinction of turning the fastest lap of the day at 166.47 kph. Fourth place went to England's Peter Collins in a Ferrari, fifth to Oliver Gendebien, Belgium, also in a Ferrari, sixth to Cuba's Alphonso Gomez Mena in a D Jag, seventh to Piero Drego, and eighth to Masten Gregory, U.S.A., both in Ferraris.

There can be no doubt that the race was a spectacular success as a sporting event. Somewhere between 125,000 and 190,000 paying spectators and countless freeloaders displayed their enthusiasm for it in typical Latin fashion. True, much should be done to reduce the risk to spectators and it is hoped that this lesson was learned; fortunately the race was completed without the cost of a contestant-spectator accident. We feel sure that everyone there and racing enthusiasts throughout the world hope that the F.I.A. will continue their sanction and the sponsors their support of this international event.

—J.H.W.

ITALIAN TRAGEDY

EUGENIO CASTELLOTTI (winner of last year's Sebring race with Fangio) was killed at Modena while testing a new Ferrari that was to be run at Sebring. He had been the top test driver for Ferrari for a number of years.



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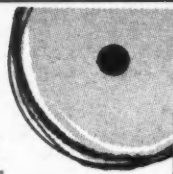
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SPOTLIGHT ON DETROIT

continued from page 10

15 per cent below those for March '56.

A GAS-TURBINE-POWERED TRUCK occupies much speculation in GMC's Chevrolet Division. Under test for the last six months, the project is a cooperative effort on the part of Chevrolet Division and GM's Research Staff. Mounted in a Model 10413 tandem-axle Chevrolet chassis is a "Whirlfire" GT-304 gas turbine plant based upon the 1955 turbine used in the Firebird II. Developing 200 horsepower, the "Whirlfire" features what is called a fuel-saving regenerator. This is strictly an experimental unit, is *not* to be construed as ready to sell, and is, in the words of Chevy's chief engineer, Harry Barr, "a look down the road to determine the gas turbine's potential in the heavy-duty commercial field."

DON'T LAUGH AT A TRUCK WITH A TURBINE—remember that air suspension has been a reality for some time on busses. Also remember that Boeing Aircraft and Kenworth trucks have been engaged in some rather successful turbine research in the lab and on the Western highways for some time. Go-

10 Grand Years of Grand Prix Racing

continued from page 34

horsepower you get, until you reach the point where the valves can't stay open long enough to let sufficient fuel in, or connecting rods start whooshing out of the cylinder block. So the obvious answer to all this was, many cylinders and as short a stroke as possible.

MERCEDES-BENZ had realized this in 1939 when they designed their 1500cc Type 165, which had a V8 engine with the stroke shorter than the diameter of the bore. This "over-square" engine was the first such design since the early 1900s. Increasing cylinder pressures had forced designers to use compact combustion chambers in order to get good burning of poor-quality early racing fuels, and thus they had to use small bores. As time went on, however, fuels improved and so did metallurgy, which meant that reciprocating parts became able to stand the additional stresses imposed by shorter strokes and higher rpm. As a result, Maserati brought out a "square," equal-bore-and-stroke engine of 78 x 78 mm in 1936, and Mercedes an over-square unit in 1939. Ferraris were continuing the same trend with their V-12 of 1947, but this engine proved difficult and expensive to develop fully.

ing back to Chief Engineer Barr we are told that the gas turbine engine has superior torque to that of a reciprocating engine of similar output.

THE TURBO-TITAN Chev/GMC truck's turbine is mated to a conventional truck tandem-drive unit. Because of the characteristics of the "Whirlfire" it is possible to simplify transmission applications — in this experimental instance a simpler version of the Powermatic (truck automatic box) is used. Just how this box was simplified is not told, but the entire project has a more practical twang than have some previous blow-torch setups. For the technical minded, we can say that the "Whirlfire" weighs 850 pounds including all operating accessories, develops 200 (plus) horsepower at 35,000-rpm gasifier speed, that the power turbine speed is 28,000 rpm, and that the gas temperature is a maximum of 1650° F. The gasifier idles at 15,000 rpm, the compressor ratio is 3.5 to 1, the regenerator recovers 80 per cent of the heat in the exhaust gas, and the two turbine wheels are of the single stage-axial flow type. The compressor is a single-stage centrifugal type. Starting is simple: turn on the fuel, press the starter button, and the gasifier is soon turning 4000 rpm. When idle (15,000 rpm) is reached, the starter and spark are turned off, and away you go—or *auwhoosh* you go, if you prefer.

Alfa-Romeos, almost unbeaten since their inception, lost their three best drivers in a few months (Varzi, killed practicing for the 1948 Swiss Grand Prix; Wimille, died practicing for the 1949 Buenos Aires Grand Prix; Trossi, died of cancer in early 1949) and so decided to withdraw for 1949. That year the Talbots, Maseratis and Ferraris fought it out. The Talbots were much slower than either of the Italian cars, but they scored on lower fuel consumption; and here we come at last to this part of the story.

Two-stage supercharging allowed higher boost pressures for a lower power consumption, but when designers kept on increasing boost, trouble started over again. The only practical way to cool a supercharger internally is to do so with lots of cool fuel. The hotter the supercharger runs, the more fuel you've got to push through it to keep it cool. In order to make sure that the fuel is cooling instead of heating things up further, you've got to use some type of mixture with a high latent heat value, i.e., something that doesn't ignite at the slightest provocation like ordinary pump gasoline. To do this, designers used such fancy fuel components as methanol, benzol, ether, alcohol, acetone, etc. All these ingredients have a high latent heat value and a high comparative octane number but relatively few calories, so in order to keep engine power up it is

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Shooting Star illustration courtesy Longines, official timepiece for the Renault record run.



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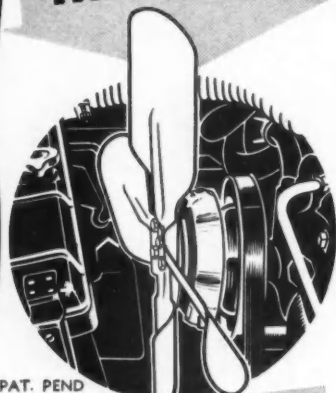
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necessary to pour in more fuel. For instance, while normal 80-octane gas has about 19,000 British Thermal Units, you'd be lucky to get half of that in a typical racing fuel for a highly stressed engine. So all this meant very high fuel consumption, and while the cost was bad enough, the worst problem was where to store it all on a racing car. Maseratis were getting about 2½ miles per U.S. gallon in 1949, and this meant well over 100 gallons for a 300-mile Grand Prix. Of course all this couldn't be stored on a racing car, so they had to stop twice and sometimes three times for fuel in every race. On the other hand the Talbotts could squeeze through with one tankful, didn't have to stop at all, and thus received a sort of handicap which often meant the difference between winning and losing. In 1949 Talbotts were able to win the Belgian Grand Prix, and the G.P. de France, against the faster but thirstier Maseratis.

IN 1950 ALFAS CAME BACK, with 350 bhp at 8500 rpm out of the same design, and started back on their winning streak. Towards the end of the year Ferrari decided to exploit the other end of the formula and switched over from supercharged to unsupercharged engines. He worked out, with his new engineer Lampredi, a V-12, 4.5-liter engine which almost immediately showed great promise and threatened the Alfes very severely in 1950. The relatively low speed of the Talbotts had led many people to consider the unsupercharged racing car dead, but they forgot that the Talbot wasn't a racing engine at all, but a souped-up sports-car unit not fully representative of what a modern unblown engine could do. Ferrari's men designed an up-to-date unit with twelve cylinders in a 60-degree V and one overhead camshaft per block, which had about 350 bhp at once and was subsequently developed to plenty more.

THEN THERE WAS THE BRM. This was an ambitious (too ambitious) venture sponsored mainly by ex-racing driver Raymond Mays to provide a "national" racing car like the French Arsenal. Unlike the Arsenal, it wasn't government-sponsored but privately financed by manufacturers, enthusiasts, and the general public. The design was many years ahead of its time. It incorporated 16 cylinders in a wide V, and had a total of eight overhead camshafts, with the power take-off in the middle of the block. The engine was supercharged by a two-stage centrifugal Rolls-Royce unit developed from airplane design. As an engineering accomplishment it was sublime, but practical difficulties got continually in its way. For one thing it was far too advanced, being designed to run at 12,000 rpm, and development thus became fabulously costly. However, probably the greatest single drawback was the supercharger. This centrifugal unit was very efficient in maximum pressure at extremely high rpms, but not so efficient

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at low engine speeds. Efficiency of a centrifugal blower rises as the square of the speed, so that at low rpm, when you want a lot of push to get the car out of that corner fast, you haven't got it. Centrifugal superchargers have been used successfully for some years at Indianapolis, but wide speed variations are not indulged in there, so you don't have to worry about dropping rpms. On the other hand, the Roots blower, then popular in Europe, is just a mechanical pump, and its output rises parallel with engine speed.

Why did BRM designers use the centrifugal layout when they were fully aware of its disadvantages? Again it was the old problem of looking too far ahead. The BRM was designed to develop power outputs unheard of among 1500cc cars, and which could not have been obtained with Roots blowers. These blowers have one inherent disadvantage: they soak up too much power to drive, and this power requirement increases sharply at very high boost. The BRM did obtain terrific figures: 585 bhp at 10,500 rpm was the maximum with available carburetors, but this figure was obtained on the test bench, and once on the track things didn't work that way. This bhp figure has never yet been attained on a racing engine of under five liters capacity, but must remain as a tantalizing vista of what things might have been if they had gone right for the enthusiastic British.

IN 1951 the issue lay plainly between Alfa-Romeo with its veteran Type 158 and Ferrari with its 4.5-liter engine. Although towards the end of the year the Ferrari was definitely faster, Alfas managed to scrape home for the 1951 World Championship. Thanks went to a staggering technical achievement when they wrung over 400 bhp out of their 13-year-old design, managing over 4000 feet per minute piston speed and 10,000 rpm. This represented the absolute limit with that design and resulted in a fuel consumption of about one mile per U.S. gallon! So they had to use 80-gallon tanks, and the handling varied sharply between full and empty tank conditions. With all that fuel on board it became impossible to take advantage of full power until the tanks were more or less half empty, and this was very tough on drivers.

THAT MEANT CURTAINS for the fabulous, expensive, temperamental, blown 1500s. Their formula was to linger on until 1953, but after 1951 Alfa decided that the Type 158 had definitely had it, and backed out for good. This left Ferrari at the top of the tree with a possible challenge by BRM, but after several failures, race promoters decided the British car was not to be trusted, so they gave up Formula 1, alleging there was no chance of a struggle and thus no spectacle. All the 1952 races then went over to Formula 2, and thus the drama of Grand Prix racing entered an entirely new phase. continued

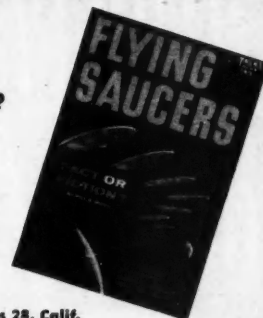
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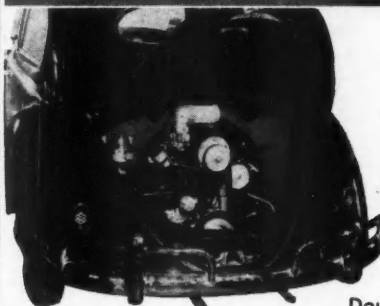
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FIA SANCTIONED THE FORMULA 1 for 1946-53, and about that time they also approved a sub-formula known as Formula 2, for up-to-2000cc unsupercharged and 500cc supercharged cars. The idea was to develop a smaller and cheaper racing car, and encourage Formula 2 racing. This was then known as *voiturette* or small-car racing. It had sprung up spontaneously just after the War, with 1100cc Simcas and Cisitalias among the contestants. The official FIA approval served to perk things up, and in 1949 the first genuine Formula 2 racing car appeared: the Type 166 F.2 Ferrari single-seater. This was a racing version of the sports car which Ferrari started out with in 1946, and was much faster than any of its rivals. It had a V-12 engine like the then-current 1500cc Ferrari racer, with 60 x 52.5 mm bore and stroke. The same piston area and rpm considerations had produced the design. In 1951 an entirely new car was laid down by brilliant young Aurelio Lampredi of Ferrari: a four-cylinder unit of extremely short stroke and very wide bore. Here previous ideas were going by the board, Ferrari insisting that in an unsupercharged engine, lacking a mechanical "pump" to squeeze fuel in, good turning effort (torque) was more important than high rpm and bhp. Furthermore, he could use big valves on his four and thus avoid one of the inconveniences of the V-12's little cylinders, where the valve throat was so small that it tended to block fuel pouring through. Many felt that the stroke of the new engine (78 mm) was too short and that it would not give adequate piston suction, but the design immediately proved a hit and, in fact, remained the almost unchallenged leader of Formula 2 racing during its existence.

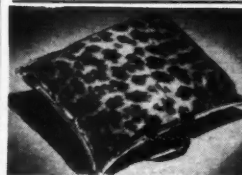
WHEN FORMULA 2 BECAME THE MODE for G.P. racing, Ferrari was in a strong position with its four, mainly opposed by Gordini's six-cylinder unit. However, Gordini only won one big race, the Rheims G.P., and Ferrari won the rest. During 1952 Maserati, too, was working on a six, which appeared at the Monza G.P. in July, but received a bad setback when its No. 1 driver, Fangio, crashed and was badly injured, not racing until the following year. Nevertheless Maserati kept on and developed a car which was lighter and faster than the Ferrari, but less reliable and thirstier. Maserati might have won the 1952 Italian G.P. had it not been for a high fuel consumption which forced it to stop while Ferrari ran right through. Ferrari was by this time running his cars on 90-octane gasoline, which enabled him to achieve relatively high mpg figures.

1953 WAS THE LAST YEAR of Formula 2, and it was an exciting one, because Ferrari and Maserati were closely matched. Maserati was faster, Ferrari quicker in acceleration and better handling on slow courses. The two teams had a colossal fight in the French G.P., and finally Maserati

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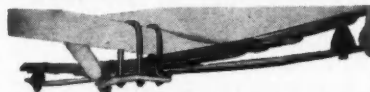
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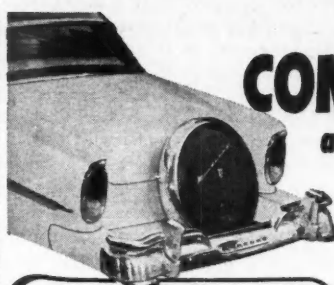
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won the Italian race after another staggering duel which started on Lap 1 and only resolved itself on the last bend before the finish. Gordinis were outpaced in that year, mainly handicapped by lack of money. During Formula 2's brief walk in the sun, unsupercharged engines had for the first time gone over 100 bhp per liter, and many of the lap speeds achieved with the 400-bhp. Formula 1 cars were equalled and beaten by the 200-bhp two-liter tiddlers. Technical trends had been reversed: the requirements of unsupercharged engines had called back big individual cylinders and stopped the trend towards eight-, 12- and 16-cylinder V engines.

Then came the 2½-liter formula. This was a logical extension of Formula 2. Displacement limits went up to 2500cc unsupercharged and 750cc with forced induction. Nobody ever built a 500cc supercharged car for Formula 2 and nobody has yet designed one for the present formula, except for an unsuccessful attempt to adapt a production engine in 1954. The problems related to effectively supercharging a small engine are many. Mainly it's a question of terrific revs, extremely high boost pressures, and attendant problems of heat and high fuel consumption. In fact Mercedes were thinking of 290 bhp when they laid out their Type 196-R car, and they were getting just about this when they retired it after two successful seasons. However, we're jumping ahead of things.

WHEN THE NEW FORMULA STARTED in 1954, Ferrari, Maserati and Gordini all showed adaptations of existing Formula 2 designs, Ferrari going to 94 x 90 mm and later 100 x 79.5 mm, the first time a 100 mm stroke had been used in racing since before World War I. Maserati, however, won the first two races with a new car with a de Dion rear end, and then Mercedes-Benz came on the scene and won very conclusively in the French Grand Prix with their brand-new streamliner. This car incorporated so many revolutionary features that it is impossible to discuss them all within the scope of this article. The main technical advances were fuel injection and desmodromic valve operation (see our Mercedes 300-SLR road test, April MT). Neither was new: positive opening and closing of valves, particularly, is almost as old as the automobile, but after a few early experiments was scrapped as metals in those early days were unable to stand the stresses involved. Fuel injection has many advantages, including better mixture distribution, and the fact that the piston suction doesn't have to pull a heavy fuel/air mixture through a maze of carburetor passages, thus slowing down air inlet speed. As the critical octane requirement is slightly lower with fuel injection, it is possible to bump the compression ratio slightly. Another incidental point is that by carefully tuning the "ram effect" of the incoming gas column, Mercedes engineers were able to obtain over



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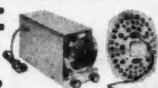
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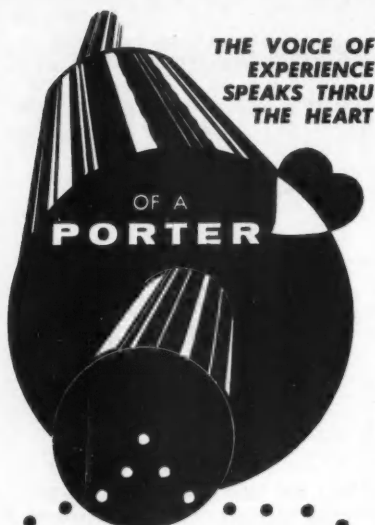
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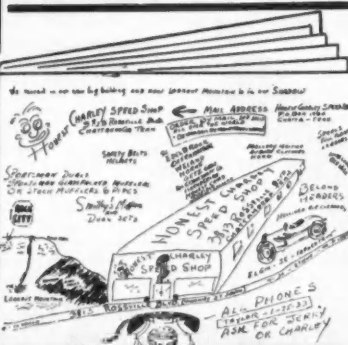
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100 per cent cylinder filling at times. The German firm was not the first to use fuel injection on a race car. It has been known at Indianapolis for years, and in Europe, Connaught used the Hilborn system in 1952. Mercedes were the first to perfect it to meet the severe standards of Grand Prix racing.

Of the practical results of positively closed valves, little is known except that the cars were able to attain very high rpms, over 9000 being quoted for Fangio's car. Apparently there were no failures of the positive valve operation under racing conditions, which were extremely arduous and included racing almost without any oil (at Barcelona in 1954).

LANCIA ANNOUNCED ITS INTERESTING V8 in late '54, the engine itself taking part of the stresses in the forward part of the car. Cylinders were splayed out 90 degrees and three carburetors nestled between the two inner sides of the V. Another new Grand Prix car was the Gordini, a straight eight like the Mercedes, but of fairly conventional design except for an unusual Watts-type front suspension. The Lancia proved itself very fast from the outset, but the untimely death of Alberto Ascari in 1955 dashed Lancia's racing aspirations and the cars were turned over to Ferrari, who now races them in his team with very good results. The Gordinis are slow and apparently less nimble around a small circuit than the previous six-cylinder cars.

BRITISH RACING CAR BUILDERS meanwhile present an interesting panorama. Connaught, a small specialist firm that keeps racing through sheer enthusiasm and tight-rope financing, has a conventional four-cylinder, overhead-cam, Alta engine coupled to a pre-selector gearbox. Their power output is not as high as their rivals', but the cars are very reliable and always finish very well. Vanwall, sponsored by the makers of the Vandervell Thinwall bearings, also uses a four-cylinder engine with S.U. fuel injection; this seems to be the most promising of the three. The third is the fabulously fast but unreliable BRM. Bearing no similarity to its ill-fated predecessor, the new BRM has a four-cylinder engine of remarkably over-square proportions (102 x 77.5 mm) which reaches 9000 revs mainly through the use of an enormous inlet valve which, unfortunately, tends to break down very soon as it cannot stand the shuttle loads imposed on it. The obvious answer to all this would seem to be a four-valve head, with smaller, lighter and less easily breakable valves. The BRM, probably the lightest of current formula cars, out-accelerates and out-travels anything else on the road but has a reputation for quick entry to the dead-car park with some expensive blow-up.

AND HERE WE ARE TODAY. Design is now split between the post-1947 multi-cylinders theory (Maserati now has a

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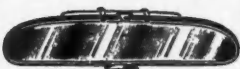
V-12 racing car) and the post-1951 reversal to simplification and use of four or six cylinders. There are arguments for both sides, but with fuel injection, one of the four's advantages has been lessened. (Fuel injection makes gas distribution to multi-cylinders much easier because there are no manifold pulse effects to worry about). The problem with small valves is that they tend to obstruct fuel inlet if too small in number and too small in size, but with fuel injection, only air is admitted past the valves (at least with direct injection) and as the specific weight of free air is much lower than that of fuel/air, this disadvantage is considerably reduced. It is easier to pull or push a light fluid through a hole than a heavy one. The British are solidly behind the four-cylinder theory, and the early results obtained are promising, but whether they will be able to keep up with the power potentialities of the V8 Ferrari-Lancia and the new V-12 Maserati remains to be seen. Significantly, Ferrari lost all interest in his 1954 four-cylinder car.

HOW DOES ALL THIS AFFECT STOCK CARS? That's a long story. Racing car design is always pushing forward aggressively and solving tomorrow's problems today. No touring engine in the world can operate at 120 bhp per liter and 9000 rpm like today's racing mills, but if stock engines *do* reach those dizzy heights then engineers will have all their principal problems worked out in advance. Of course, that largely depends on the turbine. Those motorized vacuum cleaners may eventually push the reciprocating engine off the road, and the piston job may never reach the ultimate in design. But even so, lessons learned are always useful. And the engine isn't all of a car, either. The influence of racing on suspension, steering, braking and stability is incalculable. It was racing (not Grand Prix, but sports-car racing) which gave the world the caliper-type disc brake which may solve America's tough braking problem. Tire design is another feature that owes everything to racing. Today's road-burning Jaguars and Mercedes can travel at over 100 mph in safety thanks to continual improvements in tires made necessary by rising race-car speeds.

The best test of what racing design does to touring cars is to drive a car built by a famous racing marque. Drive a Mercedes, a Jaguar, Alfa-Romeo, Porsche and so on, and you will get in all cases superlative steering, wonderful brakes, an engine that you can flog all day long, and a driving position that somehow seems uncannily tailored just for *you*, even though you may be just cadging a drive in a pal's car. The seat fits you like a glove and after 10 minutes you feel you could play music with the car. If that isn't progress, I think it's still one up on power radio antennas, rear-view television cameras and leopard-skin upholstery.

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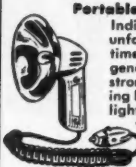
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by John Booth

Q. I am interested in purchasing a factory-equipped fuel injection car and am wondering whether or not it would be practical. I hear lots of comments about their being hard to service and requiring an unusual amount of maintenance. What is your opinion? Is Chevrolet the only American make available? Robert Stoutt, St. Paul, Minn.

A. Like any new and novel product, fuel injection is going to suffer its share of opinionated pros and cons. There will undoubtedly be many thousands of words written about how good or bad it is. Until experience on the road comes up with the real answers, misinformation will run rampant. In other words—we just don't know how much maintenance will be involved with fuel injection and neither does anyone else. This includes the factory men too!

Until performance history is fact, we, like everyone else, can theorize about possible trouble spots in today's concept of F.I. and (here's an opinionated pro and con already) we feel we will be about 80 per cent correct and hope we are 100 per cent wrong.

At the present time there are eight major F.I. designs (that we know of) in the works. Of these, only two are currently offered to the public: the Rochester (Chevrolet and Pontiac) and the Bendix (Rambler Rebel). Regardless of make or design, all current fuel injectors must ultimately accomplish two things. They must first of all get gasoline to the cylinders and secondly, they must get it into the cylinders in the exact amount and at a precise moment.

The first necessity is a special fuel pump to create needed line pressure. This can vary from a modest 20 pounds per square inch in the Bendix Electrojector to over 160 pounds per square inch in the Fuelcharger unit. Some designs are electrically driven, while others utilize a mechanical engine accessory drive. In either case, a malfunctioning pump presents a serious maintenance problem. During the development stages, this unit gave the engineers fits. Research has vastly improved their reliability, but the whole problem hasn't been solved yet. You can therefore expect a certain amount of bugs to crop up for a while.

Once the gasoline has been pressurized, it must be injected into the cylinders in varying measured amounts according to the power demand on the engine. Regardless of the method used to accomplish this, the timing device, which controls the amount of fuel, and the nozzles, which control the spray pattern, must resist any change in factory specifications through wear, or uneven fuel distribution to the cylinders will result. Gasoline has some abrasive characteristics and when continually ejected through a small hole (about 0.011-inch) under pressure, a gradual change in the nozzle spray pattern will inevitably result.

Fuel Injection Foul-ups

At this writing, the nozzle orifices *do* change through wear and until a more abrasive-resistant metal is adopted, periodic replacement can be expected.

Several methods of timing the fuel charge have been adopted. The Bendix is electronic, using an electrical interpreter and printed circuit. Transistors replace the usual vacuum tubes and a sender (similar to the engine distributor) is incorporated in the distributor drive. Other methods use engine vacuum, rpms, and oil pressure in various combinations to control the amount of fuel injected into each cylinder. The reliability of diaphragms, printed circuits, contact points, solenoids and linkages is just a guess at this point, but based upon *past* experience with similar units, a certain amount of maintenance is to be expected.

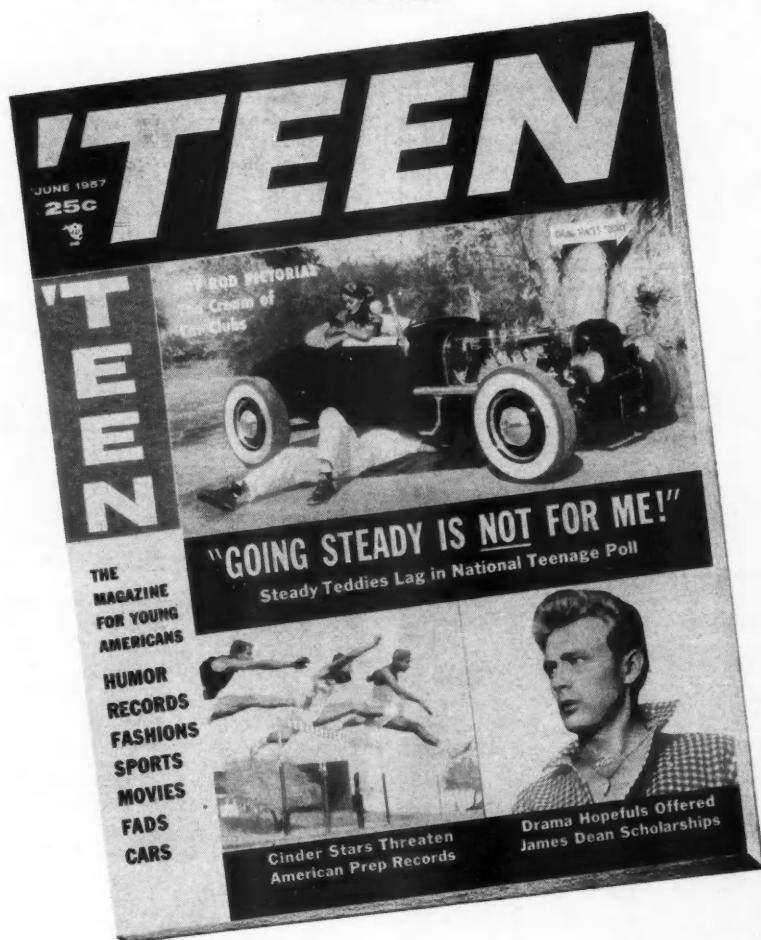
Accessory controls for altitude, air/fuel ratio, and fuel cut-off all contribute to this maintenance complexity. Obviously, many thousands of test miles will eliminate a lot of potential trouble spots; but 50 years of automobile manufacturing experience have proved beyond a doubt that controlled longevity tests can't begin to equal the fact-finding potential of thousands of drivers under as many situations. The general public's use of F.I. will undoubtedly uncover maintenance problems that the best test engineering techniques have completely missed.

There are other unknowns to be taken into consideration, too. Just how much trouble will be experienced by use of various brands of gasoline with their dissimilar gums, coloring additives and other foreign substances is open to speculation. Then too, we come to the age-old problem of actually performing this potential maintenance. It is unfortunate but true that our mechanics of today are, for the most part, "parts changers." We suspect a lot of trouble will be experienced by the general public in getting proper servicing and adjustment of F.I. units, especially the first year or two. A case in point is the rather pathetic experience that owners of twin-carburetor cars have had—even today it is hard to find a mechanic who can properly adjust both pots.

We don't intend to leave the impression that F.I. will always be a service headache. Far from it. We feel it will eventually become more reliable than our present carburetors, but right now and for the next year or two you had better expect to make a trip to your service center with unaccustomed regularity. We could be wrong, but don't make book on it.

The MT technical staff would like to answer all letters personally, but we have been so hopelessly swamped with correspondence that it is impossible to do so. We have therefore, instituted a policy of answering as many questions as possible only in the Technical Questions column.

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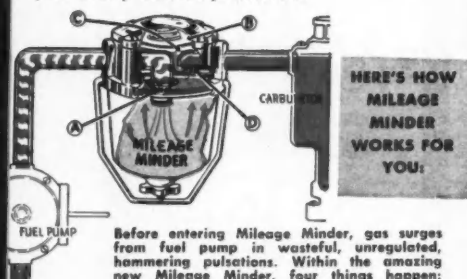
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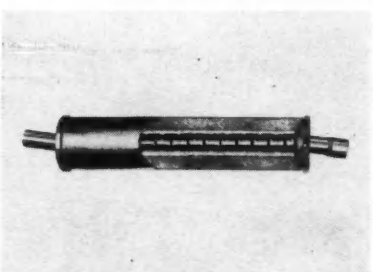
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Motoring

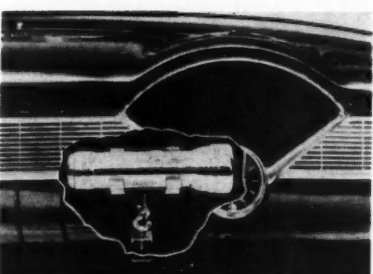
This department is not composed of paid advertising. constitute an endorsement by MOTOR TREND. When



SPORTS MOTORALL in pairs! They are made of washable, Sanforized sailcloth. The colors available are red, white, blue, black, gold and faded blue denim. The design is continental for comfort and style. The ladies' model features a drop seat. \$15.95 each from Vilem B. Haan, P. O. Box 54, Beverly Hills, Calif.



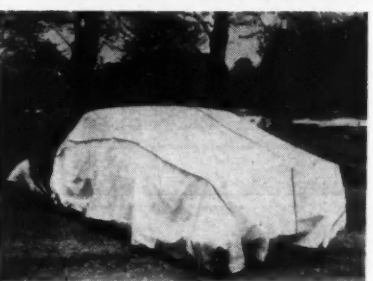
MUFFLED MUFFLER, even on recent V8 models, are claimed with the installation of the Hush-Tone muffler. It has the advantages of a straight-through muffler without objectionable noise. Claimed to be leak-proof and blowout proof, they are guaranteed for the life of the car. Make and year of car determines price of between \$7.40 and \$9.50 from Standard Automotive, 3401 E. Pico, Los Angeles.



HYD-AWAY your flashlight with this new bracket which mounts on the bottom inside edge of the dash and sneaks the holder and flashlight out of sight behind the panel. Holder gives more room in the glove compartment and omits the usual rattling around of a flashlight. The bracket and flashlight for \$3.19 from Burgess Battery Co., Freeport, Ill.



SAVE ELBOW GREASE on gritty, rusted chrome with F&H Chrome Clean. Each bottle is furnished with small, fine steel wool pads, which react with the liquid to dissolve unsightly stains, dirt, oxidation, etc. The chrome will wipe clean with no gummy residue. An 8-ounce bottle, with pads, is 98c from Fletcher-Hillyer Corp., 906 Metropolitan Bldg., Minneapolis 1, Minn.



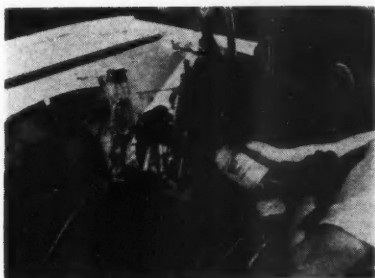
MY KINGDOM FOR A HOUSE need no longer be your car's complaint. This one can be carried right in the trunk. These Rolla-Cloth garages are made of a light, strong, waterproof material. They are spread over the auto and drawn tight around the wheels with a drawstring. They will not stick to the paint of the car. \$24.95 from Budge Mfg. Co., Inc., 10th & Ontario Streets, Philadelphia 40.

Accessories

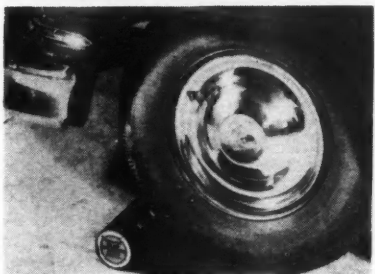
Claims are those of the manufacturer, and do not ordering, include sales tax if required by your state.



DEVIN FIBERGLAS BODY is available in eight sizes and will cover anything of a size or shape to be called a sports car. F.O.B. their factory, all sizes are \$295, which includes trimming and crating. Body will require light sanding to remove high gloss prior to painting. Devin Enterprises, P.O. Box 357, Fontana, Calif.



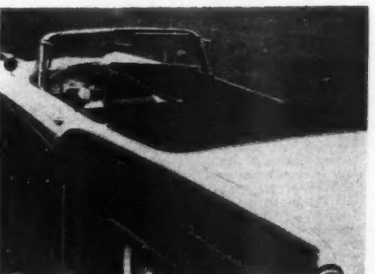
NO MORE STEAM CLEANING, says the manufacturer, with this aerosol-canned engine degreaser and motor cleaner. The user just pushes the button on the can and sprays the engine. You will note from the picture that the carburetor is protected with a plastic bag. The product is \$1.49 from Plasti-Kote, Inc., 9801 Harvard Ave., Cleveland, Ohio.



WHOA! Don't shatter the plaster! Save your car and garage with this Portable Car Stop. The Stop is placed in a position to stop the car's front left wheel with a smooth wedging action. Three reflector eyes aid in navigating. The Stop sells for \$4.10, postpaid, from Taylor Made, 2142 Euclid Ave., Cleveland 15, Ohio.

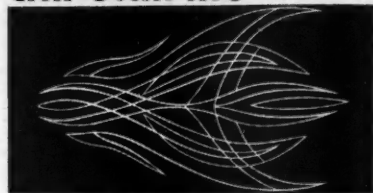


BUILD YOUR OWN ELEGANCE with this Revell scale-model 1956 Continental Mark II. Ford Motor Co. authorized the blueprints which include the overhead-valve V8 engine and power-brake cylinder down to the rear-end housing and springs. Interior is customized. Order No. 1209 costs 98c through Revell, Inc., 4223 Glencoe Ave., Venice, Calif.



STANDARD CONVERTIBLES or sports cars will have adequate protection with this custom tonneau cover. The two different styles are priced from \$29.95 for sports cars and \$47.50 for American convertibles. The manufacturer claims high-quality materials, custom styling and workmanship. For information, write to Robbins Auto Top Co., Dept. MT-5, 1453 Lincoln Blvd., Santa Monica, Calif.

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SELL

'48 LINCOLN CONTINENTAL V-12 in exc., all-orig. cond. Hunter Green with ww's, o.d. \$2000. J. Sam Johnson, P.O. Box 672, Owensboro, Ky.
 PARTS FOR '34 DE SOTO Airflow Model SE 4-dr. sed.: 3 engines, rear ends, overdrives, transmissions, radiators & many other parts in usable cond. Send inquiries to Box 334, Rocky Mount, N.C.
 '35 AUBURN 653 cpe. Just completed engine overhaul, with new factory parts. Body needs work. Reason for selling: lack of finances. Johnny Rainbolt, 620 N. College St., Cordell, Okla.
 CLASSIC CAR Sales Catalogs: Packard, Chrysler, Lincoln, Cadillac, Pierce-Arrow, orphan & foreign cars; minimum \$5 each. Also MoTOR (N.Y.) annual numbers; details for large, stamped, addressed envelope. A. E. Twoby, 400 N. Kenmore, Los Angeles.
 '28 STUTZ SPEEDSTER in factory cond. A masterpiece of restoration by professional craftsmen; orig. in every detail. Driven only 1500 mi. \$3450 or make offer. Bruce D. Robbins, 1949 Paloma St., Pasadena, Calif.
 '38 (OR '39) FORD 4-dr. conv. in good restorable cond.; equipped. Drive anywhere. \$300-\$350. Also all parts for '28 & '32 Franklin sedans. Ken Hill, West Sand Lake, N.Y.
 '40 BUICK Century conv. sed. with sidemounts. Good mechanically; good top. Needs metal work, painting & work on seat. Best offer over \$300. A. F. Ebert, Edgewood Dr., Galion, Ohio.
 '31 GRAHAM-PAIGE Straight 8 cpe. Rumbleseat, 6 wire wheels, 4-speed free wheeling. Good looking; 90% restored. Beat this for \$395. Ray Cookston, 822 Wicklow Pl., Dayton 6, Ohio. Phone RA 3528.
 FORD A, B & T PARTS. Send 25c for complete listings: state which listing you want. G. S. Schulze, 1207 S. 91st St., West Allis 14, Wis.
 '16 COLE 7-pass. touring. Serial No. 32057. Big & powerful Northway V8 engine. Repainted, good



tires, mechanically sound. \$750 or best offer. W. W. McLaughlin, 1242 Wisconsin Ave., Pittsburgh 16, Pa.
 '41 CADILLAC Darrin custom conv. Black, with white top. Exc. mech. cond.; all running gear & paint restored. \$1500 or best offer. Roger E. Gay, R.F.D. #1, Maynard, Mass. Phone TW 7-8043.
 '28 PIERCE-ARROW Model 81 cpe. One of only 2 coupes produced that yr. Best offer. John Plachy, 6454 S. Troy, Chicago, Ill.
 BUGATTI 57-C Gangloff conv. cpe. Supercharged; only 450 mi. since factory rebuilt. Show winner; featured in "Driving Around," Nov. '56 MT. \$4200. Precision Motor Cars, 9717 Wilshire Blvd., Beverly Hills, Calif.
 '29 BUGATTI Type 46 5-liter clb. cpe. Orig. cond.; show winner. Featured in "Driving Around," Nov. '56 MT. \$2200. Precision Motor Cars, 9717 Wilshire Blvd., Beverly Hills, Calif.
 '38 HISPANO-SUIZA conv. J. 12-cyl., 570-cu.-in. engine. Mechanically perfect; body, engine & interior fair. The most desirable classic. \$2850. M. Corradini, 1148 La Rosa Rd., Arcadia, Calif. Phone Hillcrest 7-6352.
 '37 HISPANO-SUIZA close-coupled K-6 2-3 pass. cpe. Engine just overhauled at \$1000 cost—new pistons, sleeves, etc. Newly painted, new tires; can be driven anywhere. \$3450. M. Corradini, 1148 La Rosa Rd., Arcadia, Calif. Phone Hillcrest 7-6352.
 '36 CORD 4-dr. sed. Restored body; has cracked block. 2 extra engines in good cond. \$750 takes all. If interested, write for information. Tony Trapani, 6651 S. Claremont St., Chicago 36.
 '37 CORD SC phaeton. Looks good; performs beautifully, just rebored. Over \$3000 invested; sell for \$1500 cash. John G. Vogeler, Pound Ridge, N.Y.
 '32 FRANKLIN air-cooled victoria brougham. En-

gine & running gear in fair cond.; body rough. Sell complete, or for parts. L. Shantz, 25 Whitewood Rd., Toronto, Ontario, Canada.
 '29 STUDEBAKER President 8 4-dr. Orig. mint, showroom cond.; 23,000 mi. Shown at '55 Iowa Auto Show. Even orig. paint, on engine; chassis good. Sacrifice \$500. Gene Leon, 2826 1/2 Garfield St., Clinton, Iowa.
 '38 CADILLAC 75 Fleetwood conv. cpe. 141-in. wheelbase, new 6-ply tires, custom interior & top. Body, chrome, mech. exc. cond. Low mileage. \$1200. L. T. Kline, 19631 Lanark St., Reseda, Calif. Phone State 5-8503.
 '48 LINCOLN CONTINENTAL cabriolet with Mercury engine. Black, mint cond., 22,000 mi. Tubeless ww's, duals, plastic covers, seatbelts, r & h, air conditioner, not installed \$1795 or best offer. Dr. H. G. Pickett, 542 Byrnes Dr., San Antonio 9, Tex. Phone TA 6-3879.
 '46 LINCOLN CONTINENTAL with '52 Cadillac engine, standard trans. Also orig. engine. Orig. gray finish; good cond. Best offer over \$1000. Robert Rucker, Tremonton, Utah. Phone ALpine 7-2662.
 '33 PLYMOUTH cpe. Exc. chrome, ww's, 62,000 orig. mi. Car now being driven. 1st \$395 takes. Norton Nash, Barry Gardens (Apt. E-7), Passaic, N.J. Phone PR 9-718.
 '54 STUDEBAKER Commander V8, customized when new. Single cockpit, Offy engine, immac. total mileage, 1000. Cost \$4000; will sell for \$1600. Joseph Van Blerck, 397 Woodcleft Ave., Freeport, L.I., N.Y.
 CATALOGS. Manuals, Magazines—American & foreign cars & trucks. Prewar hubcaps & lenses. Car, truck ads. Revised general list, 15c in coin or stamps. W. McMillan, 8412 Flower Ave., Washington 12, D.C.
 '20 BUICK 4-dr. sed. Orig. paint, no dents; needs top & uph. work. Runs good. Extra tires & tubes incl. Real rarity. \$375. George Caudill, Box 667, Hobart, Okla.
 '41 CADILLAC 62 conv. cpe. Largely orig. clean interior; new top; exc. for restoration. Straight trans., twin spots, new battery, good tires, r & h. In daily use. \$495. Don Axford, 1064 S. 32nd St., Birmingham 5, Ala.
 '32 BUICK 4-dr. sed. Body perf., uph. very good; everything complete. New rings, valve job; good tires. Best offer over \$200. Clarence Albert, c/o Mr. Self, Carter St., New Canaan, Conn.
 '35 MERCEDES-BENZ W-18, 2.9-liter conv. in good running cond. 3-carb system; extra trans., crankshaft, differential, axles, camshaft, valves, pistons, con rods, & other parts. Make offer. W. H. Kossick, Rt. 3, Box 336, Petersburg, Va.
 '29 OAKLAND V8. Runs good; complete except body, wheels. Sell all or part. Make offer; all inquiries answered. Also Motor & Rato overhauled valves in good cond. B. E. Crosby, Box 235, Holbrook, Ariz.
 '37 PACKARD Super 8 4-dr. Twin fender wells; very clean. Needs some engine work. Also Ruxtel for Model T. Make offer; all inquiries answered. B. E. Crosby, Box 235, Holbrook, Ariz.
 '01 CURVED DASH OLDS. Newly restored tires, body, engine, wheel bearings; uph. exc. \$2500 firm. Judge Martin McFarland, 143 Garden Lane, Decatur, Ga.
 '35 CHEVROLET standard touring in exc. running cond. New paint, body perf. Needs seat covers & top; otherwise complete. \$500. C. D. Moore, 707 S. Main St., Normal, Ill.
 '29 PIERCE-ARROW 8 7-pass. sed. Black. Recent engine overhaul. Must sell; \$750 or best offer. S. C. Skull, P.O. Box 184, Arriba, Colo.
 '29 FRANKLIN 135 close-coupled sed. Complete; mech. very good. Good top, fine interior, 7 good tires. Needs some body work, plating & painting. Frederick Kolbe, 40 Indian Hill Rd., Winnetka, Ill.
 '26 WILLIS-KNIGHT 66 7-pass. sed. Complete, run well. New top, plating, 7 good tires, plus many accessories & spare parts. Needs paint. Frederick Kolbe, 40 Indian Hill Rd., Winnetka, Ill.
 '48 JAGUAR Mark IV. Leather 90% good & orig. 3-pos. top. Needs little restoring. Must sell; need garage space. Make offer. Vernon L. Neunaber, 7224 Premium, Long Beach 8, Calif.
 L.P. GAS—2 complete conversion units. One 25-gal. tank & one 35-gal. tank \$100 each. LeRoy Thompson, 6935 Westfield Pl., Boise, Idaho.
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 '29 MARMON 8 Roosevelt 4-dr. sed. Orig. owner. No rust or dents, uph. always covered; exc. thorough. Wire wheels, sidemounts. \$250. Ken Hill, West Sand Lake, N.Y.
 '33 PLYMOUTH 5-window cpe. with rumbleseat. Completely & beautifully restored by manufacturer at great expense for show purposes. Lacquer finish. B. Wyckoff, 29 Sylvan, Pleasant Ridge, Mich.
 '31 PACKARD 840 conv. cpe., with '35 Duesenberg J engine, trans. & dash, incl. chronograph. Reborn, S-J pistons, tubular steel rods. Restored; new chrome & leather, tinted glass. \$1500. George E. Williams, 2359 Burgener Blvd., San Diego 10, Calif.
 '28 CHEVROLET 4-cyl. touring, with wooden wheels. Runs good; exc. for restoration. Spare parts 4-dr. sed. incl. \$350. Hubert Priddy, 1335 Western Ave., Glendale 1, Calif.

'54 ASTON-MARTIN DB2-4 3-liter cpe. Haze Blue; exc. cond. \$3350. A. Hugh Clarkson, Mill Rd., Doylestown SR2, Pa. Phone BUCKingham 8872 after 7 P.M.

JAGUAR Mark V PARTS: Engine, clutch, trans., driveshafts, rear end, wheels, springs, generator, starter, carburetors, radiator & shell, tachometer, speedometer. If not listed, write; make offer. John E. Lapham, Rail Road St., Danville, Va.

WRECKING '35 PACKARD 8 station wagon—former Navy ambulance. Factory No. 1203A-208; Engine No. 756404. Parts for sale as is. E. Stochli & W. Richards, Rt. 1, Strasburg, Ill.

MERCEDES-BENZ 190-SL ring gear & pinion. Standard ratio; slightly used. Guaranteed. \$34. Schuerman, 750 E. Wood St., Decatur, Ill.

'54 FORD 2-dr. sed. with '55 Ford engine. E-2 Rev Master cam, Iskenderian Columbia o.d. stick-shift, 2 carbs, all S-W instruments, T-Bird valve covers. Black & white Naugahyde. Halford's Service, Marston, Mo. Phone 9961.

'27 DURANT in A-1 cond. Drive anywhere. A fine car for only \$600. Bill Jones, Liberal, Mo. '48 TRIUMPH 1800 4-pass. conv. Rumbleseat & 2nd windshield; rt. hand drive, 4-speed trans., 6.00 x 16 tires. Exc. cond. Watson Albright, 73 Blossom Heath, Williamsville 21, N.Y.

'12 BUICK 4-cyl. rdstr. Gas lites & brass kerosene lites; trunk & round tank in back seat for gas. Rt. hand drive. Restored; mech. perf. Contact Nathaniel Adelstein, 1700 Calhoun St., Trenton, N.J.

'27 FRANKLIN 6 7-pass. limousine. Restored like new; run every day. \$1500 or best offer; pix on request. R. V. Davie, 697 Main St., Westbrook, Me.

'48 LINCOLN CONTINENTAL conv., with custom interior & Carson top. Orig. V-12, with stand. trans. & o.d. Black, with ww's; exc. cond. thruout. \$1595. V. F. Carlson, P.O. Box 191, Phoenix, Ariz.

'53 CUNNINGHAM conv. cpe., with year-old Eldorado engine. McCulloch supercharger. Silver & white, chrome wire wheels. Tires, brakes, shocks, etc., all in exc. cond. Asking \$4000. Gene Green-spun, Beaux Arts Hotel, 310 E. 44th St., New York. Phone MUrray Hill 9-3800.

'37 CORD sed., with '51 Cad engine & Hydramatic trans. properly installed. Beautiful cond.; 10,000 mi. on engine. Very dependable, fast acceleration & top speed. \$1500 takes it. J. C. Abbott, 1822 Westwood Blvd., Los Angeles 24.

'48 LINCOLN CONTINENTAL cpe. Perf. body; Royal blue. O'hauled V-12 engine in exc. shape; no repairs necess.; just drive away. All extras. \$2095 or best offer. James L. Gore, Taylortown Rd., Montville, N.J.

'22 ESSEX 4-cyl., in exc. cond. Orig. paint, uph., etc. 3 extra tires. Priced at \$585 for quick sale. Ralph Hillerman, 3793 Hoover St., Riverside, Calif.

'39 BANTAM pickup. New red & white paint; engine o'hauled. Exc. for restoring. Make offer. Danny Liles, 3954 Atlantic Dr., Chattanooga 5, Tenn.

'16 METZ Speedster. Needs fenders to finish. \$350, incl. many new parts. C. S. Amsley, St. Thomas, Pa. Phone EM 9-2151.

'24 FRANKLIN sed. Needs some new wood around top. \$190. C. S. Amsley, St. Thomas, Pa. Phone EM 9-2151.

'35 PIERCE-ARROW V-12 conv. cpe. Partially restored; sidemounts, wire wheels. Engine exc.; can be driven anywhere. Spare parts incl. \$745. William E. Schulte, 6350 Severin Dr., La Mesa, Calif.

PACKARD PARTS: '38 V-12 & '34 8 new hubcap medallions, tire cover mirrors, hubcaps, owner's manuals, trans., luggage rack, many other parts. Bob Helfenstein, 11130 Beaconsfield, Detroit 24. '33 PACKARD 12 conv. cpe., with Dietrich body. New black lacquer, white orlon top, spoke wheels. Engine & trans. in good cond. 2nd owner. Best offer over \$1250. Cooper C. Woodring, 1537 Tennessee St., Lawrence, Kan.

SELL OR SWAP

'39 CADILLAC 4-dr. conv. sed. True classic, 90% restored. Chauffeur partition; new black lacquer, red leather top. Underpriced at \$1050. May trade for foreign job or what have you? Ray Cookston, 822 Wicklow Pl., Dayton 6, Ohio. Phone RA 3-328.

HENRY J customized Corsair rdstr. 4-cyl. engine



with o.d.; easy to install Chevy V8. R & h, new tires; no top. Cost \$1200; consider trade. Make offer. G. Goodhead, 6326 E. 4th St., Tulsa 12, Okla.

WANTED

'24 BUICK 4-cyl. touring car. Also other cars older than '15 models, especially Stutz & Mercer. Send info & pix. W. F. Oliver, Box 5547, Lubbock, Tex. ORIGINAL CATALOGS & brochures of any of the great classics. Will pay top prices or trade for Motor Annuals, orig. classic ads & color prints. Sheldon J. Lewis, 61-33 213th St., Bayside, L.I., N.Y.



NEEDS

ROCKETONE
TONE OF THE ROCKET
DUALS
FOR POWER PERFORMANCE!

OVER 50% OF 1956 NEW CARS WERE
FACTORY EQUIPPED WITH DUALS!

For that new car power, get your Rocketone
Duals now... plus Rocketone Fiberglass-packed
Hollywood mufflers. At all leading chain stores.

ARROW MUFFLERS

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UNITED HOME & AUTO SUPPLY
12524 St. Clair Ave.
FEATURING
HUSH-TONE MUFFLERS—DUALS—HEADERS
CUSTOM EQUIPMENT

\$7.95 to \$9.65
Most Cars

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BEAUTIFUL TONE—NO NOISE
UNCONDITIONALLY GUARANTEED

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ALL-NEW 1957-8
HI-PERFORMANCE
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HOW TO STEP UP YOUR CAR'S
POWER! MILEAGE! STYLE!

ALL-NEW Catalog reveals TRUTH about Power Equip. Gives "Bumping" info, Customizing Tips! Shows all brands for ALL cars—100,000 items in stock Multi-Carburetion, Injection, Superchargers, Dual Exhausts, Racing Cams, Heads, Pistons, Engines, Tires, Lubric "Dress-up" Accessories, Chrome, Fiberglass Sport Bodies, etc. Buy DIRECT & SAVE UP TO 1/2!

ALMQUIST ENGINEERING CO.—Milford, Pa.
Dept. MYC 5 (Dealers Wanted)

The Eyes Have Had It

ONE OF THE AXIOMS of safe driving has long been "Keep an eye on the rear-view mirror." This not only protects the wary driver's car from sheet-metal damage; it also acts as excellent insurance against an occasional traffic ticket.

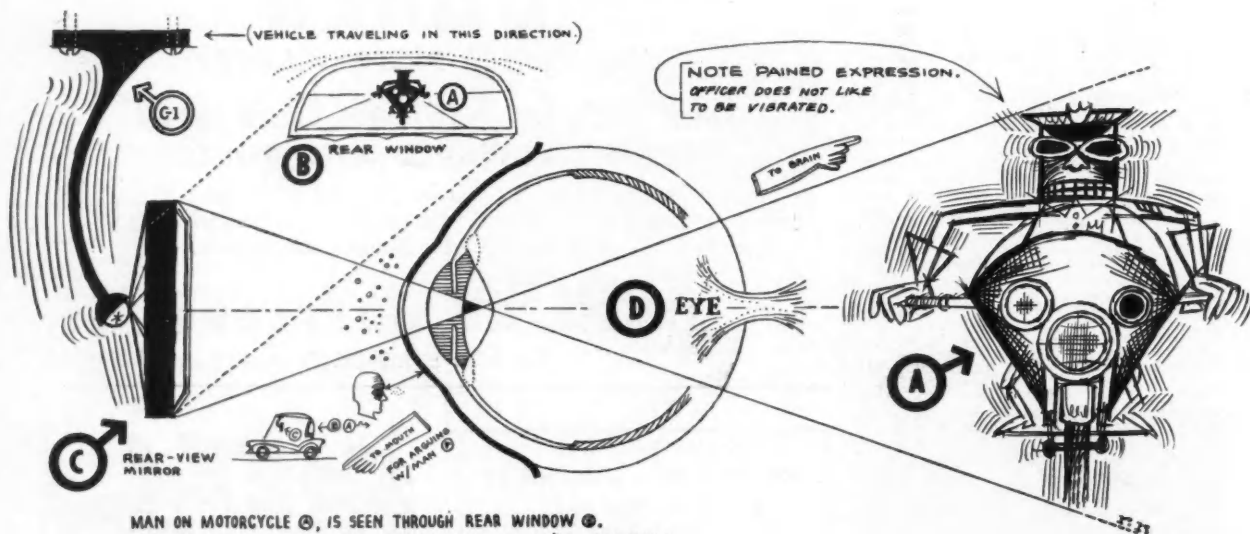
Lately though, and especially since some of the '57 models hit the streets, it has become increasingly difficult to see anything at all in the rear-view mirror without first steadying it.

Outside mirrors have always been subject to a certain amount of vibration, and we have more or less despaired of any improvement there. We could at least count on the inside mirror for a clear view of the road astern. Now, for reasons unknown, the mirror is suspended by a piece of tubing that wouldn't do

justice to a curtain rod. It wobbles so badly that any decision we make based on the image reflected is purest optimism.

Paradoxically enough, in the midst of an Automotive Renaissance, we can't get satisfactory performance from a component developed 50 years ago. The problem isn't insoluble; a good casting, solidly mounted, would hold the mirror in place and maintain adjustment indefinitely.

We don't ask for a complete reversal of styling trends or a return to Grandfather's day. We do feel, however, that the price we pay for curved, tinted, shatter-proof, one-piece rear windows entitles us to a mirror that lets us see through them without turning around in the seat.



MAN ON MOTORCYCLE (B), IS SEEN THROUGH REAR WINDOW (A). MAN (B)'S IMAGE IS REFLECTED IN REAR-VIEW MIRROR (C). REFLECTED IMAGE FROM (B), PASSES THROUGH EYE (D) (CONJUNCTIVA, CORNEA, AQUEOUS HUMOR, PUPIL, IRIS, ETC. INCLUDE THE RETINA). TOSS IN A FEW NERVES, ADD A BRAIN FOR LUCK, AND YOU'VE GOT THE PICTURE.

MORAL: EYE STRAIN ISN'T THE ONLY PENALTY YOU PAY FOR SPEEDING.

*NOTE VIBRATING MIRROR (C) CAUSED BY INFERIOR CONSTRUCTION OF MOUNT (E). AUTOMOTIVE ENGINEERS THEORIZE THAT ONLY MIRRORS ARE STEADY, AND THAT EVERYTHING ELSE ON EARTH IS VIBRATING. DON'T BELIEVE IT!

Absolutely Astounding!

**TAMES NOISE!
CHANGES BLASTING ROAR TO POWERFUL PURR
GIVES YOU NEW POWER YOU CAN FEEL!**

**AMAZING NEW ULTRA-SONIC
FREE FLOW MUFFLER**



They said a straight through, no-back-pressure muffler couldn't be built that would keep noise within pleasing limits.

BUT WE DID IT! We employed new louvre theories developed in restricted tests . . . a new secret principle that changes the pitch of objectionable sound, from the noisy, blating low-frequency range, to *inaudible high frequency* notes, yet retains the throaty pur-r-r of power!

A dog may hear these objectionable notes, but the keenest eared authorities can't. The pops, the roar, the screech . . . these are all removed beyond human hearing range, and only the mellow, throaty resonance of full power remains.

STRAIGHT THROUGH POWER

Pick up the Free Flow. Look through it. You can see all the way through, without obstruction. No complicated returns. No baffles. No turns, twists, bends or cross plates to keep exhaust from zooming straight through. You know what this means. It means you can have the power, the gas savings, the new feeling of freedom and zippy pep that heretofore have only been possible with *no muffler at all.*

SONIC CHAMBERS—SOUND BLOTTERS

Each end of Smooth-Tone has an entirely new design in sonic chambers—that has a sound-blotting effect—takes out blats, roars, pops, and snaps.

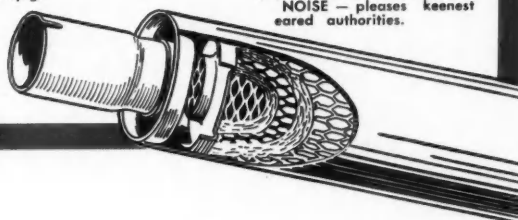
ABSORBASONIC PACKING

FREE FLOW employs one of the newest packing substances known to science, a new and exclusive development combining a miraculous new sound and vibration absorption with long fibre endurance and heat resistance.

**Guarantees You More Power and
Gas Savings . . . Reduces Back
Pressure and Noise!**

Only Smooth-Tone Promises and Delivers All This:

- SEAMLESS! HEAVY GAUGE STEEL WITH WELDED ENDS.
- LIFETIME GUARANTEE. Rust-Proof! Blowout-Proof!
- REDUCED BACK PRESSURE—as much as 54%
- GAS SAVINGS—up to 4 m.p.g.
- MORE POWER—better pick-up. Add 10 miles to top speed.
- LONGER, REPAIR-FREE ENGINE LIFE.
- GREATER DRIVING SATISFACTION.
- NO OBJECTIONABLE NOISE — pleases keenest eared authorities.



BUILT LIKE A BATTLESHIP

Heavy gauge seamless steel is continuous-welded (not crimped) by a new process to withstand blowouts and wear. **GUARANTEED FOR THE LIFE OF YOUR CAR.** (See guarantee below.)

INSTALLS IN MINUTES

Replaces standard mufflers without special cutting or fitting.

LIFETIME GUARANTEE

End replacement forever! Won't rust out, corrode or burn through as long as you own your car, or replacement guaranteed. Try Smooth-Tone at our risk. You must be satisfied in thirty days or your money refunded. (Smooth-Tone mufflers are being engineered for more and more models. By the time this ad appears, yours may be ready. See list at right, or write!)

Ready for immediate shipment now for these cars:

Plymouth '42-'57, Olds '54-'56, Buick '53-'56, Chev '54-'57, Ford '49-'56, Mercury '49-'57, Pontiac '55-'57, Dodge '55-'57. And other popular cars.

\$9⁹⁵

Each Postpaid
\$19.50 Dual Set



Mail Coupon Today!

Smooth-Tone Muffler Co., MT-5
2241 Market St.
San Francisco, Calif.

Please rush one or two Smooth-Tone Free Flow Mufflers under thirty day money-back free trial.

Make, year and model of car _____

I enclose \$9.95 for single ☐ or \$19.50 for dual pair ☐ (check, money order or cash) which will be promptly refunded on return of merchandise unless fully satisfied. (Shipped postpaid.)

Name _____

Address _____

City _____ State _____

Dealers . . . Muffler shops: Valuable Smooth-Tone Franchises available the country over. Order sample pair of mufflers now.

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Faster paste waxing!

Easier paste waxing!



Start right in waxing!

Johnson's new J-wax

does the cleaning work for you!

**No extra cleaner needed
—nothing else to buy!**

J-Wax has just what paste wax needed—a built-in cleaner! The exclusive J-Wax formula goes to work fast. Cleans while it waxes—saves you hours of work. J-Wax replaces grime with a glistening coat of wax. *Tough wax. Hard-finish* wax that protects your car in any weather.

J-Wax puts more wax on your car—leaves

more wax on your car than other one-step waxes. And J-Wax goes on smoothly, easily—evenly. Leaves no dull spots or streaks. You are sure of more all-around protection with J-Wax in any weather—from bumper to bumper, including the chrome!

Look for Johnson's J-Wax in this new key-opening can. Only J-Wax guarantees sealed-in freshness. It's the fastest, easiest way to genuine wax protection—*paste wax protection!*

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